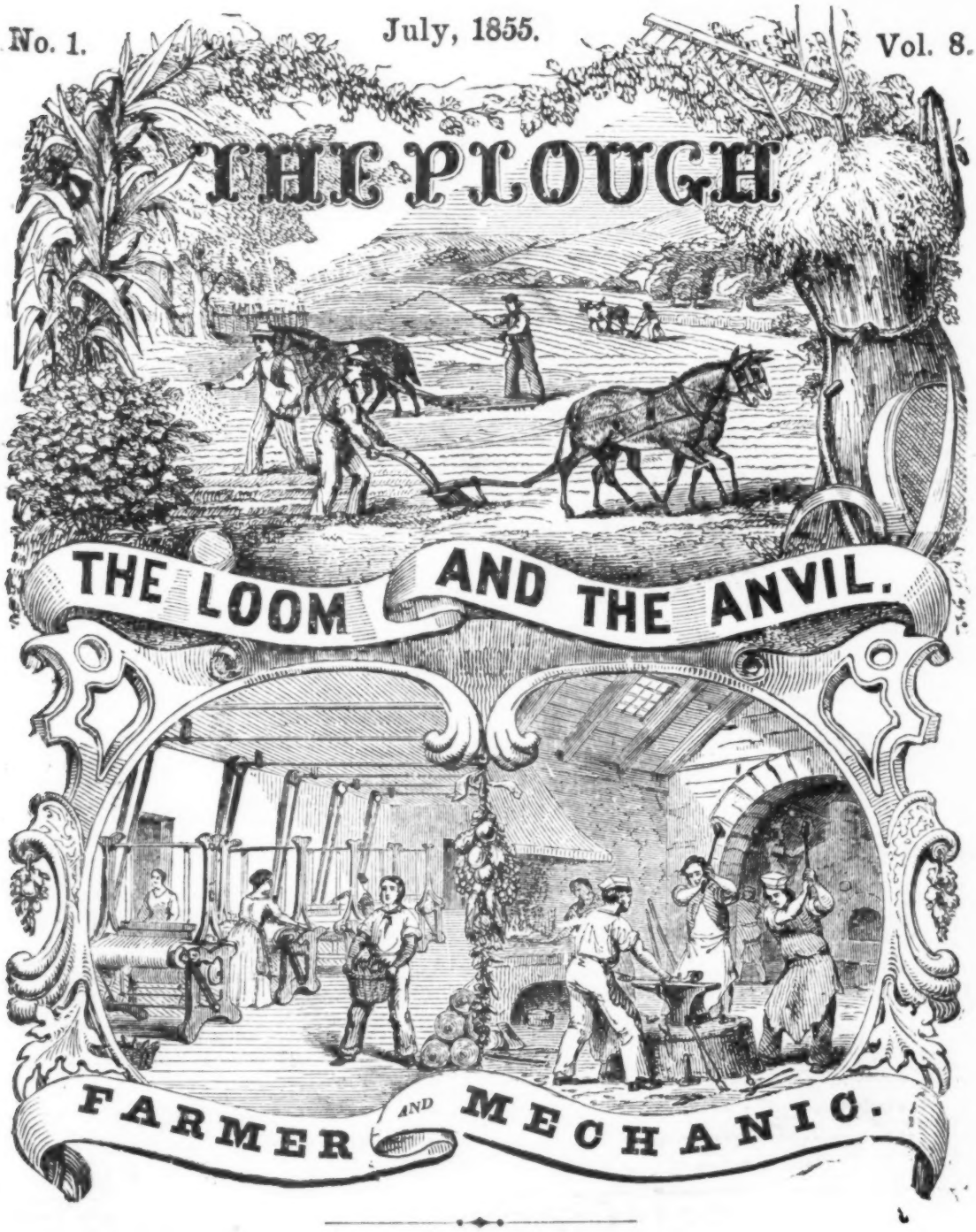
No. 1. July, 1855. Vol. 8.

# THE PLOUGH

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The *Petersburgh (Va.) Intelligencer* says of HURD'S HAIR RESTORER: "This preparation seems to be efficacious for the restoration of the hair upon bald heads. We have seen the testimony of persons well known to us, who have used the compound successfully, thereby corroborating the opinion of its restorative energy."

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This preparation is highly perfumed, and gives to the hair a dark, soft, glossy, and lively appearance, which can not be obtained from any other article. It effectually cleanses the scalp, and keeps the head clean and healthy.

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*New-York State Agricultural Society,*
*State Agricultural Rooms, Albany, Feb 20, 1854.*

At the Show of the Society, held at Buffalo, in September last, a *Cattle-weighing Machine* was erected by Messrs. T. & B Fairbanks & Co., of St. Johnsbury, Vt. The Scales of Messrs. Fairbanks were selected as most likely to give satisfaction to the exhibitors of fat cattle. The judges appointed on miscellaneous articles awarded the first premium of the Society for the machine which was erected by them,—and the judges on fat cattle, who superintended the weighing of all cattle exhibited, expressed their approbation of the great accuracy of the machine.

BENJ. P. JOHNSON, Cor. Secretary.

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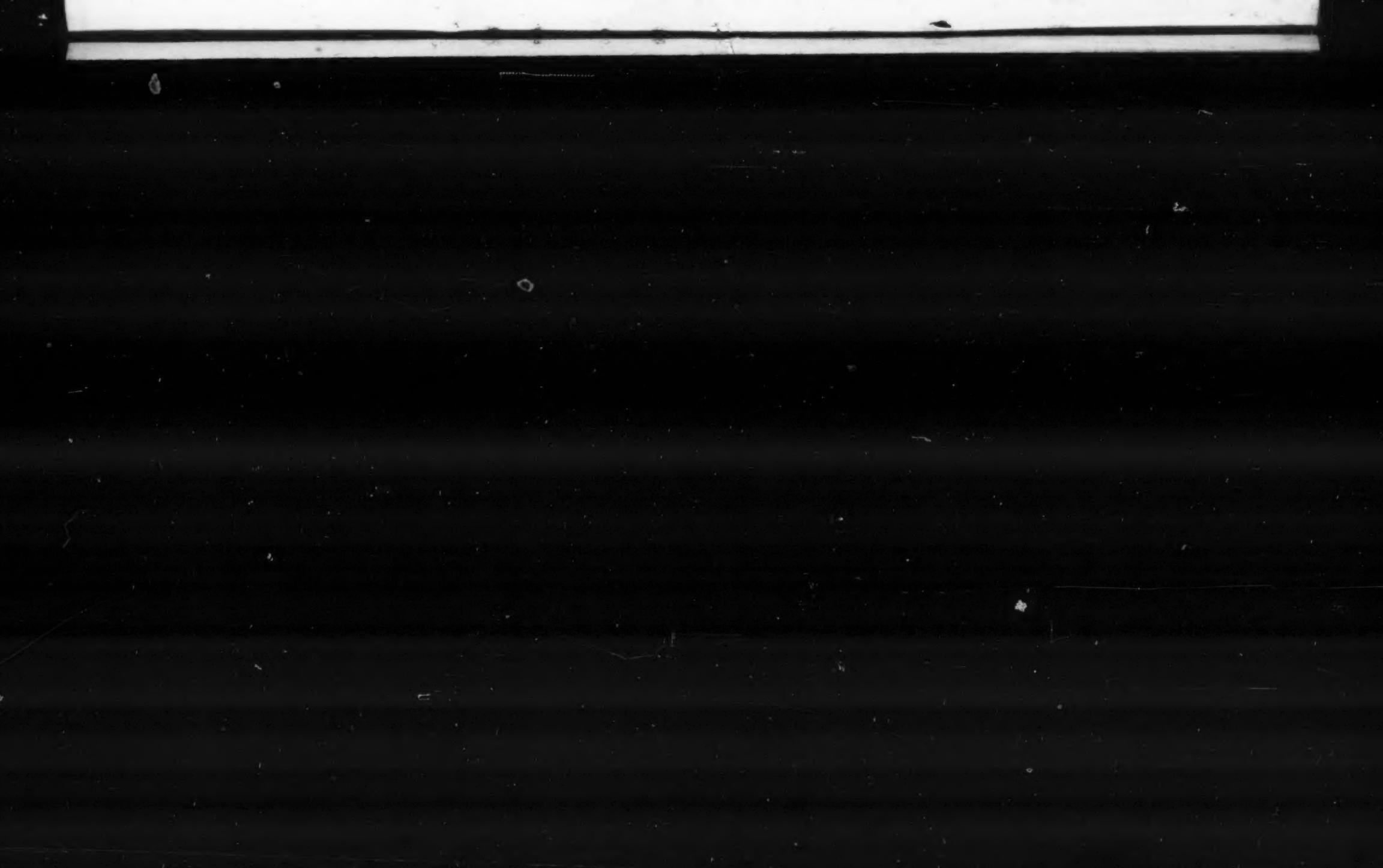

# The Plough, the Loom, and the Anvil.

Vol. VIII. JULY, 1855. No. 1.

## THE MINING OF GOLD.

The immense change in the quantity of gold annually converted into coin, can not fail to have some material and permanent influence upon the money value of merchandise. The difference between ten and twenty millions of annual product, for a single year, is not of much account; and this was the maximum variation in the first quarter of this century. But now the difference is tenfold this amount, and this increase of annual product promises to be permanent. Let us look at this. The entire quantity of metallic coin in this country was estimated at from $9,000,000 to $16,000,000; and in 1821, from $18,000,000 to $20,000,000. From that time to 1841, it appears by the Custom-House returns, that the importation was $181,589,814, while $138,085,922 were exported, leaving in the country $43,003,892. To this add the quantity in the country already, estimated, as above, at $19,000,000. Deduct the quantity annually used in the arts, supposed to be $500,000, and the quantity lost by wear, estimated at ¼ of one per cent, or, taking these two items as absorbing $1,000,000, add the product of domestic mines, estimated at $6,000,000, and the result gives, as the estimate of the amount of gold and silver in the country in 1841, equal to $57,503,892. This gives a decennial increase of 73 per cent.

The average annual product of gold and silver coin in the world, for the first half of this century, is estimated at $60,000,000. Of this about one half is supposed to be used in various manufactures of wares, etc. California and Australia each now yields about $80,000,000 annually. Hence the annual product of gold and silver must now be about $200,000,000. If $60,000,000 was the annual product a few years since, one half only of this being kept in the currency of the world, and the product is now as above stated, allowing even $50,000,000 to be used in manufactures, we shall have an annual increase of coin amounting to $120,000,000.

It is true that the commerce of the world is greatly extended, but not in any ratio to compare with this. The world's population does not greatly increase from year to year, and the changes produced by the progress of civilization and refinement is, unhappily, very far behind any such proportion as is denoted by these figures. In our own largest cities, luxury, and dissipation and extravagance do increase at a fearful rate, but these are only small excrescences, very limited pustules on the surface of the great body politic. Our agricultural and mechanical population, as a whole, maintain the sim-

plicity of manners and moderation of expenditure, which marked those classes in our earlier history. The changes that have occurred have been chiefly, perhaps, in a more thorough and more expensive education of both sexes, and this change is for the better. On the other hand, with the great improvements made in the mechanic arts, the various products of the factory and the shop are very much cheaper now than twenty years ago.

An article in the Review of our learned friend De Bow, commented upon in one of our late numbers, contains the following passage: "It would be asking an impossibility to demand nothing but specie in payment, when the exports of cotton alone are considerably more than the whole annual produce of gold and silver in the world." The whole crop of cotton being within $100,000, the mistake of this writer is quite obvious. He must have made his comparison from very imperfect statistics.

We find an article in the February number of this Review, (De Bow's,) which presents a quite extensive view of this production; and though we have taken no opportunity to compare these statements even with our own figures, we copy them, the character of the Review, apart from the apparent familiarity of the writer with the topic discussed, being sufficient to entitle them to careful attention. The writer proceeds as follows:

The gold regions of the United States are two: the "Appalachian gold field," and the California, or "Sierra Nevada gold field." Gold in the Appalachian mountains is first mentioned in Jefferson's Notes on Virginia. It was first obtained in North-Carolina in any considerable quantity. The precise date of its first discovery is unknown. In 1799 a lump described as of the size "of a small smoothing-iron," was found in North-Carolina. About 100 pounds of gold had been found in that State up to the year 1830. The first native gold of this country was coined at the United States Mint in 1825, and up to 1830 four fifths of our gold coin was from native metal. From 1804 to 1827 North-Carolina had furnished all the gold produced in this country, amounting to $110,000. In 1829, Virginia furnished $2500 worth, and South-Carolina $3500—the first from these States. In 1830, Georgia made her first deposit, to the amount of $212,000. There were then some six or seven thousand persons engaged in gold-washing in that State. North-Carolina had nine different *placers;* and in South-Carolina about 200 persons were engaged in the business, but with small success. In 1838, gold was considered so abundant in the Southern States, that the government established three mints for the coinage of bullion, one in North-Carolina, one in Georgia, and one in New-Orleans.

The production of gold in the Appalachian field attained its maximum in the period from 1828 to 1845, and then declined rapidly till 1853. In 1836 four gold mines were worked in Virginia, but the yield was small. In South-Carolina, in 1848, there were eleven mines, but they only produced about $50,000 annually. Virginia, from 1830 up to the present time, has produced from $50,000 to $100,000 worth of gold annually. Some of the most promising mines in the State have recently been purchased by English companies, who will soon test their capabilities. The results of the speculation are not yet known. There are now eleven mines in operation in the State. North-Carolina is still considered to be the richest in gold mines. Several new companies have recently been organized. The Gold Hill mines of North-Carolina are the richest in the Atlantic States. A New-York company, with a capital of $1,000,000, is now working them. They have been sunk to the depth of 340 feet, and the auriferous quartz is found to be richer and more

abundant the deeper they go. These mines have yielded $1,500,000 since 1843. There are nine mining companies now in the State.

Gold mining in *South-Carolina* was almost entirely abandoned, until the richness of the Dorn mine was discovered, in 1852. It is owned by a single individual, and is said to be the richest gold mine in the Atlantic States. Some of the best ore is worth $2000 per bushel; at this mine a yield of $5 per 100 pounds is thought to be a poor one. Up to 1853 an amount equal to $300,000 is said to have been taken from an excavation a little over 300 feet long, 12 deep, and 15 wide. The richness of the mine is now thought to be declining.

*Georgia* produced $500,000 worth of gold annually until 1853, when the amount had declined to $58,896. Some of the abandoned mines have been recently resumed.

*Tennessee* and *Alabama* have yielded a few thousand dollars' worth of gold annually for the last 20 years, but the prospects for the future are poor.

*New-Mexico* is probably rich in gold. Near Santa Fé there are two *placers* which have yielded from $30,000 to $250,000 per annum, when worked. But little is known, as yet, of the mineral wealth of New-Mexico, but it is believed to be considerable.

Of *California* we need not speak, for it is of wide-world renown—a perfect El Dorado, such as even fable has scarcely been able to describe. There even the most extravagant dreams of hidden treasures have been realized. The discovery of the gold mines of California is to be ranked among the great events of the 19th century. Its influence upon the march of civilization has been so great, that we may say that it is the last link added to the chain connecting America with Asia; it has led directly to the opening of Japan. The moment it was known that, in California, unlimited quantities of gold could be had for the mere digging, thousands flocked thither by land and sea, and the whole world was bent on California.

The existence of gold in California was long known to the Jesuit fathers, before the Mexican war. A mine was worked near the mission of San Fernando, by a Frenchman named Baric, in 1843; and specimens of gold-bearing quartz were brought from California more than 30 years ago. But it required the eyes of an Anglo-American to see how long and broad the California mines were; Spanish eyes had been wandering over the country some 200 years without seeing any thing remarkable.

The year 1848 is memorable in the annals of gold digging; for in that year it was that a few inquisitive Americans, in the month of February caught the first glimpse, on the Sacramento, near Sutter's Fort, of the as-yet-untold treasures of California gold. They had just dug a mill-race for letting the water of the American river upon the wheel of a new saw-mill. The first water that flowed through exposed to their eyes the glittering dust. They endeavored to keep the secret, but in vain; the entire population of San Francisco, then only a few hundreds, Governor Mason and all, rushed headlong to the "diggings." All California was aroused, and when Governor Mason arrived, he found the diggings a place of the utmost excitement. All California was there, to the number of some 4000, and they were taking out the gold at the rate of from $30,000 to $40,000 worth per day! From February to the next November, after the discovery, they had taken out from $4,000,000 to $5,000,000. Single individuals averaged from five to ten ounces per day, and often as many pounds.

On the arrival of the news in the Atlantic States, of these wonderful gatherings of gold, the tide of emigration to California was overwhelming;

and, at the end of 1849, less than two years after the discovery, the 4000 diggers had increased to 50,000 Americans and 5000 foreigners.

During the years 1848 and 1849, $40,000,000 were obtained from the washings.

California, with all its miners, exhibits, as yet, no symptoms of exhaustion. It still holds the first rank among the gold-producing countries of the globe. How much gold California has thus far produced will be seen from the following table, which shows the quantity of gold that has been deposited in the United States Mint, and all its branches, by California and all the other States, since the earliest discoveries of gold in North-America :*

| Years. | Virginia. | North Carolina. | South Carolina. | Georgia. | Tennessee. | Total for each year. |
|---|---|---|---|---|---|---|
| 1804–'23.. | ..... | $47,000 | ..... | ..... | ..... | $47,000 |
| 1824..... | ..... | 5,000 | ..... | ..... | ..... | 5,000 |
| 1825..... | ..... | 17,000 | ..... | ..... | ..... | 17,000 |
| 1826..... | ..... | 20,000 | ..... | ..... | ..... | 20,000 |
| 1827..... | ..... | 21,000 | ..... | ..... | ..... | 21,000 |
| 1828..... | ..... | 46,000 | ..... | ..... | ..... | 46,000 |
| 1829..... | $2,500 | 134,000 | $3,500 | ..... | ..... | 140,000 |
| 1830..... | 24,000 | 204,000 | 26,000 | $212,000 | ..... | 466,000 |
| 1831..... | 26,000 | 294,000 | 22,000 | 176,000 | $1,000 | 520,000 |
| 1832..... | 34,000 | 458,000 | 45,000 | 140,000 | 1,000 | 678,000 |
| 1833..... | 104,000 | 475,000 | 66,000 | 216,000 | 7,000 | 868,000 |
| 1834..... | 62,000 | 380,000 | 38,000 | 415,000 | 3,000 | 898,000 |
| 1835..... | 60,400 | 268,500 | 42,000 | 319,900 | 100 | 698,500 |
| 1836..... | 62,000 | 148,100 | 55,200 | 201,400 | 300 | 467,000 |
| 1837..... | 52,100 | 116,900 | 29,400 | 83,600 | ..... | 282,000 |
| 1838..... | 55,000 | ..... | ..... | ..... | ..... | 435,100 |
| 1839..... | 57,600 | ..... | ..... | ..... | ..... | 404,208 |
| 1840..... | 38,995 | ..... | ..... | ..... | ..... | 426,185 |
| 1841..... | 25,736 | ..... | ..... | ..... | ..... | 542,117 |
| 1842..... | 42,163 | 2,899,505 | 406,044 | 3,582,033 | 50,446 | 777,097 |
| 1843..... | 48,148 | ..... | ..... | ..... | ..... | 1,045,445 |
| 1844..... | 40,595 | ..... | ..... | ..... | ..... | 967,200 |
| 1845..... | 86,783 | ..... | ..... | ..... | ..... | 1,019,281 |
| 1846..... | 55,538 | ..... | ..... | ..... | ..... | 1,129,357 |
| 1847..... | 67,736 | ..... | ..... | ..... | ..... | 889,085 |
| 1848..... | 57,886 | 473,543 | 40,577 | 257,063 | 7,161 | 896,675 |
| 1849..... | 129,382 | 485,793 | 24,564 | 236,349 | 5,180 | 7,079,144 |
| 1850..... | 65,991 | 355,523 | 19,459 | 209,587 | 1,507 | 36,988,314 |
| 1851..... | 69,052 | 326,883 | 41,052 | 157,213 | 2,377 | 56,540,612 |
| 1852..... | 83,626 | 403,295 | 126,982 | 96,542 | 750 | 54,506,963 |
| 1853..... | 52,200 | 275,622 | 99,317 | 58,896 | 149 | 55,622,051 |
| | 1,403,431 | 7,848,664 | 1,085,491 | 6,361,583 | 79,970 | 224,392,334 |
| 1854, 3 mo's | 4,631 | 62,332 | 8,044 | 4,167 | ..... | 11,111,698 |

The following amounts are included in the total: *Alabama*—$155,107 from 1837 to 1847; 1848, $14,462; 1849, $10,700; 1850, $6538; 1851, $3962; 1852, $254; total, $191,023. *New-Mexico*—1848, $682; 1849, $32,889; 1850, $5392; 1851, $890; 1852, $814; 1853, $3632; total, $44,299. *Oregon*—1853, $13,535; first three months of 1854, $445. *California*—1848, $45,301; 1849, $6,151,360; 1850, $36,273,097; 1851, $55,938,232; 1852, $53,794,700; 1853, $55,113,487; total, $207,316,177; first quarter of 1854, $11,031,479. There were also received, from miscellaneous sources, in the whole period at the Mint, $43,161.

* General Rafael Espinosa, Governor of Lower California, has recently discovered rich gold and silver mines near San José, Lower California. One silver mine of immense richness is spoken of, the mouth of which was closely covered with decayed wood, showing that it had been worked at some remote period. Near the mine stands an old dilapidated house, the walls of which are ornamented with specimens of antique painting in Indian colors, and inside the walls is a huge tree, towering in solitary majesty. A coal mine of uncommon richness has recently been discovered this side of Cape St. Lucas. The discoverer is taking steps to secure it from the Mexican government, when he proposes to form a company for the purpose of working it. It is within eight days' sail of San Francisco, and near a good landing.

From the preceding table it will be seen that up to the beginning of 1854 there had been deposited in the United States Mints the following amounts:

| | |
|---|---|
| From the Atlantic States, | $16,970,162 |
| New-Mexico, Oregon, and various sources, | 105,995 |
| California, | 207,316,177 |
| | 224,392,334 |

The actual *manifested* shipments of gold from California fall short of the above two hundred and seven millions by $3,500,000, which is the amount carried away by passengers in small and large sums.

The following table, which we find in Mr. Whitney's *Metallic Wealth of the United States*, is an approximation to the grand total of the gold produced by California up to the beginning of 1854, most of the items being from actual returns:

| | |
|---|---|
| Deposited in United States Mint and branches up to Dec. 31, 1853, | $207,316,177 |
| Shipments to foreign ports in 1848, 1849, and 1850, (estimated,) | 10,000,000 |
| Taken out of the country by foreign miners, chiefly Mexicans, in 1848 and 1849, (estimated,) | 10,000,000 |
| Shipped to Europe in 1851, | 3,392,760 |
| Shipped to South-American ports in 1851, | 2,372,000 |
| Shipped to Europe in 1852, | 6,000,000 |
| Shipped to South-America and Asiatic ports in 1854, | 1,000,000 |
| Shipped to England in 1853, | 5,000,000 |
| Shipped to other ports in 1853, | 1,600,000 |
| In circulation in California, *in transitu*, and otherwise absorbed, (estimated,) | 13,319,063 |
| | $260,000,000 |

This enormous sum of gold was produced by the mines of California between 1848 and 1853, inclusive, as follows:

| | | | lbs. Troy. |
|---|---|---|---|
| In 1848, $5,000,000 | representing of pure gold, | | 20,150 |
| 1849, 20,000,000 | " | " | 80,600 |
| 1850, 45,000,000 | " | " | 181,400 |
| 1851, 65,000,000 | " | " | 262,000 |
| 1852, 62,500,000 | " | " | 252,000 |
| 1853, 62,500,000 | " | " | 252,000 |
| $260,000,000 | | | 1,048,150 |

Having in the preceding pages given a brief sketch of the gold regions of the United States and the amount of their production, we now proceed to glance at the principal gold regions of other countries:

The gold mines of *Russia* are chiefly on the eastern slope of the Ural mountains, in the eastern part of Siberia, and in the Caucasus. The western slope of the Ural yields but little. Formerly, gold was found in the region about Archangel, but these mines have not been worked since the commencement of the present century. The gold mines of the Ural and of Eastern Siberia have acquired, during the last twelve or fifteen years, great importance. The mines of Eastern Siberia are by far superior to those in the Ural, the amount of gold found in the latter being to that of the former as 1 to 6. The Ural gold region extends over a surface thus far unknown, new mines being constantly discovered. Gold was first discovered in these mountains in 1774, but the exploitation of the mines assumed no importance until 1819. The greatest amount of gold is obtained from the washings of the sands, the

yield of which is very small ordinarily, 128,000 parts of sand giving only one part gold.

From 1823 to 1839 the gold mines of the Ural mountains produced 432 Russian pounds weight of gold, equal to 389.92 pounds avoirdupois. The total value of the gold produced by all the mines of Russia from 1819 to 1848, inclusive, was 223,900,000 roubles of silver, equal to $167,925,000. Their production in 1848 was 21,637,300 roubles of silver, equal to $16,227,975.* Up to 1850 the Ural gold washings have yielded only 932,270 pounds Troy of gold. The government first commenced their exploitation in 1814. The Russian gold mines are thought now to be on the decline.

In *England* and *Ireland* gold is found in many places in very small quantities. The Romans mined extensively for gold in Wales, but not with much success. In the reign of James V. several hundred men were employed in washing the sands of Dumfriesshire for gold, but with what success we are not informed. Gold is still found in small quantities in the tin mines of Cornwall, where it has been observed for hundreds of years.

Some years ago, a lump of gold weighing 22 ounces was found in the Wicklow mountains of Ireland, which created an immense excitement. A gold mining company was immediately formed, and a large capital wasted in endeavoring to find the *lodes* in which the precious metal originated.

Previous to the year 1853 the entire amount of gold produced by Great Britain did not exceed four ounces per annum. Since 1853 the appearance in England of a work entitled, "*The Gold Rocks of Great Britain and Ireland*," by John Calvert, filled with the most extraordinary stories of golden treasures existing in England, Ireland, and Scotland, has created an extraordinary excitement among the English on the subject; but it does not appear that any of Mr. Calvert's golden dreams have as yet been realized. Great Britain is decidedly poor in gold mines.

The same may be said of *Germany*. Some of its gold mines have been worked ever since the days of the Romans. The principal mines are in Transylvania, Hungary, Salzburg, Tyrol, Styria, and Bohemia. The entire production in 1820 was 2682 pounds; in 1848, 5645 pounds, and the yield for 1854 is estimated at 6000 pounds.

In *France*, the sands of the Rhine continue to be washed for gold, but only on a small scale. Formerly the yield was very considerable. In 1846 the gold washings of France yielded only about $9000. There is no gold, in fact, found in France worth mentioning. The poorest spot in California is richer in gold than all France.

*Spain*, in ancient time, if we may believe Diodorus, Pliny,† Strabo, and other ancient writers, was immensely rich in gold. It was found both in the solid rock and in the sands of the rivers—in those of the Tagus and Douro. In the time of Pliny, A.D. 23, Spain was the richest gold country known. Gallacia and the Asturias yielded 20,000 of gold annually. From Pliny's account of mining operations, it appears that in those remote times, 1800 years ago, not only were the ancients well versed in smelting, but that the arts of *cupelling* and *amalgamating* were fully understood and practised.

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* *Etudes sur les Forces Productives de la Russie*, par M. L. de Tegoborski, vol. 1, pp. 278–294. This work is official.

† Metallis, plumbi, ferri, aeris, argenti, auri tota ferme Hispania scatet.—*C. Plinii Secundi*, Hist. Mundi, lib. iii. 4.

Diodorus and Pliny speak of these arts as being then of the most ancient origin.

The gold mining operations of the ancients in Spain extended over a large surface, as may be seen at the present day. The places worked seem to have been thoroughly exhausted; but Spain still contains gold in considerable quantities, though the amount produced is small. If Spanish industry at the present day was equal to that of the Romans, gold would undoubtedly be produced by them in large quantities. The sands of their rivers still produce gold, but the washings are confined to the river Sil and Salor, which yield only about $8000 per annum.

*Italy* contains gold; and mines which were worked in the time of Pliny still continue to yield gold. The sands of the Po still contain gold. The principal gold operations of Italy are at present carried on in Piedmont and Savoy. The gold mines of the province of Ossola, still worked, must have been very rich in ancient times; for Pliny informs us that the Roman Senate forbid over 5000 slaves being employed in them lest the price of gold should be reduced by the large quantity produced. In 1829 these mines yielded only 250 pounds Troy. A French company has recently commenced working a gold mine near Genoa.

In *Central Asia* gold is found in various localities. In 1851 the Russians established gold washings in the Caucasus. The sands of the rivers of this region were washed for gold long before the Christian era. Thibet is also supposed to be rich in gold. The rivers of the western portion of that country are especially referred to as abounding in auriferous sands. They are estimated to yield about 10,000 ounces annually.

*Southern Asia*, that is, Asia south of the Himalayan chain of mountains, in ancient times yielded vast amounts of gold. By many the Ophir of Solomon is thought to have been somewhere in Southern Asia. Gold is still found in many localities in India. The washings of the Burrampooter are estimated to yield from 30,000 to 40,000 ounces annually. Many of the streams of the Burman empire produce gold. Ava produces about 2000 pounds annually. The Malayan peninsula is represented as rich in gold.

In *China* and *Japan* there is much gold, though we have no very reliable statistics of the amount of their production. The Japanese government forbids the exportation of gold. The gold-bearing formations of Siberia enter into China, but they are little worked by the Chinese, the government having suspended mining operations "in order to preserve the balance of circulation." This fact, whatever may be thought of Chinese political economy, shows that these mines are capable of producing abundantly.

*Borneo* has extensive gold washings. About 5000 Chinese are engaged in the washings of the western coast; and according to Mr. Brooke, the Rajah of Sarawak, the annual production is $5,000,000. The other East-India islands also produce considerable quantities of gold. Gold dust is very abundant in *Sumatra*, and is an article of considerable traffic.

The whole product of Southern Asia, including the East-India islands, is estimated at from 25,000 to 30,000 pounds annually.

*Africa*, according to the accounts of all travellers who have penetrated to the interior, is rich in gold. Owing to the climate chiefly, all attempts to engage in mining operations have proved disastrous. The gold washings of Nubia, Senegambia, and Bambuck are important. According to Russegger, who travelled through Nubia in 1838, the great chain of mountains which traverse the interior of Africa from ENE. to WSW., contains large amounts of gold of a remarkably yellow color, and of a very pure quality. The

annual production of Africa at the present time is about 4000 pounds. The next El Dorado will probably be in Africa.

*Australia*, as all know, is now second only to California as a gold-bearing country. The discovery of gold in Australia illustrates the value of geological science. Mr. Murchison, in examining the Australian cordillera, in the south-eastern corner of Australia, discovered such a remarkable resemblance between the geological position and mineralogical character of the rocks of the Australian and Uralian cordilleras, that he predicted the discovery of gold in Australia. Cornish miners immediately began to "prospect," and gold was discovered. Mr. Murchison, soon after his geological surveys, wrote to Earl Grey on the subject of encouraging the search for gold in Australia; but the Earl "took no steps whatever to promote the discovery of gold, on the ground that the production of this metal would interfere with *sheep-growing!*" We think that Earl Grey must have felt a little *sheepish* after reading the following facetious remark in the *Quarterly Review:* "We were quite unprepared," says the *Review*, "for such pastoral predilection in the colonial office under Lord Grey's presidency. To realize Arcady in New South Wales, and convert convicts into Strephons, might be a very amiable conception, but would hardly justify the minister of a great commercial empire—and, above all, a zealot of *Free Trade*—in an attempt to *cushion* rich sources of mineral wealth opened in a colony under the watch of his intelligence."*

While Earl Grey was dreaming of sheep-growing, a Mr. Smith applied to the government for a reward for the discovery of certain auriferous deposits, which he agreed to point out as soon as the reward was paid; but while Mr. Smith was awaiting the movements of the government, a "returned Californian," named Hargroves, found gold on the Macquairie river, a piece weighing 13 ounces having been dug up. Without asking for a reward, Hargroves informed the government of his discovery, and then there was a general rush for the second California.

Earl Grey now forgot his sheep-growing, and the government began to stir in the matter, by laying claim to the gold region, granting licenses to dig for £1 10*s.* per month. It also instituted a geological commission to explore the country.

The Australian gold region extends over a space of at least nine degrees of latitude, and occupies a breadth of 50 miles or more.

The discovery of gold in Australia was first announced in May, 1851. In December of that year 12,000 persons were digging for gold at the Mount Alexander gold-field. A shepherd discovered a block of quartz lying upon the surface, from which 60 pounds of gold were taken. Nearly all the gold of Australia is obtained from washings, all of the quartz-mining companies, without exception, having failed. The quartz veins are found not to be rich in gold; and investigations made in London with regard to the quartz-gold mining companies of Australia, seem to indicate that they are mostly swindling concerns.

The auriferous deposits of Australia are similar to those of California. The gold is remarkably fine, and contains from three to seven per cent of silver. The total amount of pure gold produced by Australia, since the first discovery up to the beginning of 1854, is estimated by Mr. J. D. Whitney, after a careful examination of all the returns and estimates, to be as follows:

* Quarterly Review, XCI., 511.

| | lbs. Troy. |
|---|---|
| 1851, (year of discovery,) | 30,000 |
| 1852, | 330,000 |
| 1853, | 210,000 |
| Total since discovery, | 570,000 |

*South-America* has never been a great gold-producing country; whilst its silver mines, ever since the discovery of America, have poured forth an unparalleled stream of wealth. In 1800, according to Humboldt, it produced 691,625 lbs. of silver, and only 33,524 lbs. of gold, of which 9900 lbs. came from Brazil. In 1850, South-America produced only 24,000 lbs. of gold. The countries yielding gold in South-America are New-Granada, Venezuela, Brazil, Bolivia, and Peru. The total amount produced by New-Granada since 1804 is estimated at $204,085,328. The principal mines are in the provinces of Antioquia and Veraguas. New-Granada produces annually about 13,276 lbs., and Brazil about 6000 lbs. The total amount of gold produced by New-Granada, from the earliest mining operations up to 1841, is $376,500,000; and the total amount produced by Brazil up to 1845, is 3,576,192 lbs. Troy.

*Mexico* yields gold in scarcely any other way than as a constituent of its argentiferous ores, which yield a very important per centage of gold. M. Duport estimates that per centage, for 1840, at one eighth in value. There is probably much gold in Mexico which will not be discovered until the Anglo-Americans get possession of that country—an event not far distant.

*Central-America*, according to Mr. Squier, and other travellers, is rich in gold; but we have no statistics on the subject.

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## COMMERCE OF THE UNITED STATES.

### IMPORTS AND EXPORTS.

THE annexed statement exhibits the value of merchandise imported into the United States from each foreign country, and the value of merchandise exported from the United States to each foreign country, during the year ending June 30, 1854:

| | Foreign Imports. | Domestic Exports. |
|---|---|---|
| Russia, | $1,544,235 | $335,521 |
| Prussia, | 47,773 | ..... |
| Sweden and Norway, | 515,178 | 1,085,602 |
| Swedish West-Indies, | 22,590 | 12,741 |
| Denmark, | 8,097 | 87,870 |
| Danish West-Indies, | 286,044 | 928,924 |
| Bremen, | 14,643,927 | 8,386,077 |
| Hamburg, | 2,322,971 | 2,255,519 |
| Holland, | 1,695,970 | 2,299,710 |
| Dutch East-Indies, | 1,041,600 | 109,203 |
| Dutch West-Indies, | 534,978 | 371,380 |
| Dutch Guiana, | 104,236 | 53,745 |
| Belgium, | 3,462,241 | 3,848,890 |
| England, | 140,388,733 | 135,111,708 |
| Scotland, | 5,820,469 | 3,097,662 |

| | Foreign Imports. | Domestic Exports. |
|---|---|---|
| Ireland, | 229,335 | 1,006,017 |
| Gibraltar, | 59,673 | 447,445 |
| Malta, | 83,695 | 108,528 |
| British East-Indies, | 5,378,321 | 567,193 |
| British West-Indies, | 1,126,417 | 4,756,398 |
| British Honduras, | 228,954 | 203,913 |
| British Guiana, | 47,489 | 718,096 |
| Cape of Good-Hope, | 448,903 | 292,628 |
| British American Colonies, | 2,206,021 | 4,693,771 |
| Other British Colonies | 4,344 | ..... |
| Canada, | 6,721,539 | 10,510,373 |
| Australia, | 214,202 | 2,999,635 |
| France on the Atlantic, | 32,892,021 | 29,749,466 |
| France on the Mediterranean, | 2,889,372 | 1,218,786 |
| French Guiana, | 29,618 | 100,148 |
| French West-Indies, | 161,085 | 551,525 |
| Spain on the Atlantic, | 358,504 | 1,390,348 |
| Spain on the Mediterranean, | 1,579,074 | 1,212,368 |
| Teneriffe and other Canaries, | 39,598 | 19,613 |
| Manila and other Philippine Islands, | 2,265,282 | 27,852 |
| Cuba, | 17,164,339 | 3,228,116 |
| Other Spanish West-Indies, | 2,850,353 | 990,886 |
| Portugal, | 243,592 | 127,150 |
| Madeira, | 30,007 | 47,708 |
| Fayal and Azores, | 21,584 | 10,030 |
| Cape de Verds, | 8,985 | 30,037 |
| Italy, | 971,718 | 1,586,327 |
| Sicily, | 959,300 | 246,151 |
| Sardinia, | 85,676 | 188,305 |
| Tuscany, | 1,152,717 | 11,735 |
| Trieste and other Austrian ports, | 741,919 | 1,697,319 |
| Turkey, Levant, etc., | 803,114 | 219,496 |
| Hayti, | 2,357,222 | 1,880,187 |
| Mexico, | 3,463,190 | 1,091,870 |
| Central Republic of America, | 2,360,422 | 250,539 |
| New-Granada, | 1,478,520 | 855,254 |
| Venezuela, | 3,072,649 | 1,131,604 |
| Brazil, | 14,110,387 | 4,046,857 |
| Oriental Republic of Uruguay, | 457,179 | 450,855 |
| Argentine Republic, | 2,144,971 | 658,720 |
| Chili, | 3,332,167 | 1,942,330 |
| Peru, | 1,005,406 | 651,707 |
| Ecuador, | 57,534 | ..... |
| China, | 10,506,329 | 1,293,925 |
| Asia generally, | 60,730 | ..... |
| Africa generally, | 1,385,568 | 1,716,924 |
| South America generally, | 235,693 | 47,241 |
| South Seas and Pacific Ocean, | 10,103 | 886,779 |
| Sandwich Islands, | 119,130 | ..... |
| Atlantic Ocean and uncertain places, | 60 | ..... |
| Total, | $301,494,094 | $252,047,806 |

The above statement of exports only includes domestic merchandise shipped to the places designated. The value of foreign merchandise, during the year ending June 30, 1854, was $23,748,514. This makes the total exports for the year, $275,796,320. This includes $38,062,570, of gold and silver coin and bullion. The comparative table given above shows the extent of our foreign trade with each country.

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## MANUFACTURES IN SOUTH-CAROLINA.

FROM the census of 1850, it appears that the following is the condition of manufactures in that State:

| | |
|---|---|
| Capital employed, | $5,166,865 |
| Annual product, | 7,072,513 |
| Produced in families, | 919,525 |

The number of hands employed was 7009.

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## BUSINESS OF THE NEW-YORK CANALS.

FROM the Report of the late Auditor of this department, it appears that the whole amount of TOLLS collected, the last season of navigation, upon the canals of this State, was $2,773,566.35.

The following table exhibits the quantity and value of the agricultural productions, merchandise, etc., ascending and descending, within the same period:

| | Tons. | Value. |
|---|---|---|
| Products of the forest, | 1,768,745 | $14,384,785 |
| " animals, | 78,684 | 11,666,296 |
| Vegetable food, | 903,735 | 38,331,500 |
| Other agricultural products, | 10,420 | 1,983,068 |
| Manufactures, | 258,021 | 9,796,420 |
| Merchandise, | 406,022 | 123,107,863 |
| Other articles, | 740,235 | 10,954,380 |
| Total, | 4,165,862 | $210,284,312 |

The whole number of barrels of FLOUR arriving at tide-water, was 1,249,453. Bushels of wheat, 3,523,800. This WHEAT, turned into flour, at five bushels for each barrel, would amount to 704,760 barrels, giving a total of 1,954,213 barrels. The quantity of CORN arriving at tide-water was 12,813,929 bushels.

This makes a decrease in the revenue, as compared with 1853, of $491,152; and in tonnage of 81,991 tons. There was a decrease of flour and wheat amounting to 419,774 tons, and in corn and oats an increase of 270,231 tons.

## POTATOES.

*[Translated from the French manuscript by the Editor.]*

The production of potatoes, in the city and State of New-York, is of vital importance. This tuber, at this season, commands an enormous price, and during the whole winter, has cost more than any other article of food. Comparing the price of this article in Pennsylvania, we find it to be one tenth what is paid for it in New-York.

The population of the city of New-York is more than half a million of inhabitants. It consists of Americans, descendants of the English, who, for their tables, demand beef and potatoes; of Germans who sing, "Potatoes are ruddy and fine, and also as white as alabaster, and are good for men, women, and children, and are the true plaster for the stomach;" the French, who make part of the population of the Empire City, repeat in their country, "Long live mirth and the potato." Thus this nation, who are accustomed to use the potato in their own country, not only eat it with pleasure and delight, but with greediness, and deprived of this production, they feel the want of it, and are discontented; and although the potato is at an exorbitant price, they will procure it, instead of some other kind of food which would be more nutritious and at a more moderate price, as rice, *semoulia*, (paste baked of Hecker's farina,) farina, beans, pearl barley, etc. But custom makes law. Men prefer that to which they are accustomed from infancy, and perhaps there is another consideration which leads them to prefer the potato.

Let us look at this. The population of New-York is composed, to a large extent, of workmen laboring in the ship-yards and in various manufactures. The women are not less busily employed, but labor in different shops, and thereby furnish their share of the family expenses. So the members of the family are all absent from their homes, the fire is extinguished, and all culinary processes cease. On their return in the evening the supper must be prepared speedily—hunger demands this. The fire is hastily kindled with coal or coke, or wood, and in an hour a supper of potatoes, beef steak, roast beef, or a chop is prepared, with coffee or tea with milk, which revives the strength of the laborers, restores their good humor, and makes them happy, secures for them a quiet rest, and prepares them for the labor of the succeeding day. But this is not all. That which remains of the evening repast serves for the morrow's dinner in the workshop or store, and for the noon repast of the children who remain at home, after having taken a moderate breakfast, and prevents the necessity of the loss of time and of labor, which would otherwise be required in its preparation. So potatoes are indispensable to the city laborer; and the farmer, if he understands his own interests, will take especial care to cultivate this tuber as a source of profit.

But why is it that this article is so dear and at the same time so easily cultivated? This tuber originated in America, and was imported with great care into Europe, and when it had become common in Germany and in the countries of central Europe, France had not any knowledge of it. It was during the Seven Years' War that a French officer, named Parmenthier, who was taken prisoner in Prussia, was fed upon it, and was greatly pleased with it. When his liberty was restored to him and he returned to his own country, he carried a sack of potatoes with him, and presented them to the king,

and sought his assistance in introducing them as an article of food. I pass in silence over the difficulties which he met in this effort, but he has furnished his country with the means of feeding millions of Frenchmen, and at this day his name is pronounced with gratitude and with respect as a benefactor of the nation.

But the potato is most productive in the west of Europe. Poland, after overcoming many difficulties, cultivates it extensively, so that it has become the principal article of food for its inhabitants, and a source of wealth to the producer. It is used in the manufacture of spirits, and through the influence of Pistorius, a Prussian, by means of apparatus of his invention, alcohol is distilled from it not inferior to that obtained from rye.

It is remarkable that the potato, originating in America, is now cultivated more extensively in its adopted than in its native country, and that it should become of superior quality, more farinaceous, more nutritive. It is also more productive and less liable to decay, and richly rewards the labor of the producer.

In New-York a bushel of potatoes costs ten shillings. In Poland, in the country, four bushels can be purchased for one shilling and two cents; and in the capital, at Warsaw, they cost one shilling a bushel, and the price does not exceed more than three or four shillings even in a distressing famine. It is sufficient to say that a gallon of spirits, which is produced from potatoes, is sold for one shilling and two cents, and one can judge of the immense extent of the cultivation of this tuber, which yields four, six, and even ten thousand bushels to the producer.

In France potatoes are cheap, and furnish the common food of children who attend school, and of laborers, who are in the habit of using them at their noon meal, fried in lard, and which is sold to speculators—a hundred being served together, which suffice for one person. These are sold in Paris in the streets, cooked by steam, at one cent a pound, which the laborer eats with much pleasure.

I would make a few suggestions in respect to the quality of the potatoes of Europe. The ordinary kind are more or less farinaceous, and are placed in the earth after the frost is out. These ripen by midsummer or in June. They are generally buried in sand. They are difficult to preserve, and great care is taken to keep them sound for seed. Another quality is ordinarily called "Michaelmas," because served in the month of June. The gathering of them is commenced in last of September. Another kind of potatoes is oblong, red and orange colored; but these are a luxury, and served only on the tables of the rich.

It is proper to say that America is not the only original country of the potato. Asia produces the same kind of product. The ocean also furnishes a growth analogous to this, under the name of banana; and that which shows the eternal will of Providence to distinguish the races of men is this: the potato of the interior of Africa is as black as the skin of the negro, while it has the same savory, luscious taste as the American potato, which is yellow and sweet.

We pass on now to the deterioration of this crop, and to the means necessary to prevent its complete destruction. For many years the potato has suffered from a disease which materially injures it and makes it unwholesome. This disease has been progressively developed in Poland, in Germany, in France, in Ireland, and at last in this, its native country. Some have called it cholera. In the interior of the tuber a sac is formed, which is filled with a blackish juice, which not only renders a part of the fruit unfit for consump-

tion, but is actually poisonous. Naturalists have sought eagerly to discover the nature and the cause of this disease. Some have supposed it to be occasioned by the prepared manures, and perhaps not without reason, since the hydrogen gas, which this manure contains, confines the moisture in the fruit, and the great heat confines it in the interior of the tuber, and hinders the evaporation of the humid particles which it contains, and which remaining there, in a stagnant condition, at length attack it, and become the cause of the malady. Others suppose that the use of burnt bones is the cause. Others affirm that the ground being partially covered with stones, produces this effect, since they hinder the heat of the sun from penetrating the soil, and impede the necessary vegetation. There may be some reason in this, since the fruit, being deprived of heat, can not develop itself. But neither of these has regard to the primary causes of this disease, which we will explain as, in our own experiments, they have come under our observation.

Providence has created man, and has given to him strength and vigor, as he has to all his creatures, for securing a succession of generations. The potato has been left to rely on a fictitious art for its reproduction; that is to say, the planting of the tubers. But it deteriorates; it has become weak, and has lost its vital forces, and no person is yet found to aid in its regeneration.

Being always transplanted without being renewed, the potato has diminished, has lost its vital force and vigor, and its old age has produced this disease, since it is deprived of the strong juice necessary to its proper growth. Its juices may be compared to the blood of animals, and the effects of disease are analogous.

In Poland certain agriculturists, among whom I was one, having perceived the loss of vigor in this tuber, and a general use being made of it in the manufacture of spirits, and the amount of this crop annually diminishing, they sought for the cause. At length they became convinced that the nature of the potato had deteriorated, and they resolved to obtain the seed for the following year, instead of planting the tuber, and they obtained a new growth, but smaller, and instead of being farinaceous, it was glutinous and without sweetness, and their hopes were disappointed. But they would not cease their efforts, and they replanted these potatoes the following year. The next harvest exceeded their expectations, the potatoes being large and farinaceous, and when used in the manufacture of spirits, they were much more productive. This method of renewing the crop was continued for six years. The result was entire success, and when the potato was generally attacked by this disease in Europe, which was considered as a form of cholera, their crop was liberal. Thus was it proved that this renewal of the seed was essentially beneficial.

The potato is originally from Mexico, and has been naturalized in Europe and in North America, but has continually been renewed by planting the tuber, and has thus lost its vital force, and is threatened with entire destruction.

One of the agriculturists of this country, Mr. Goodrich, has attempted the renewal of this crop from the seed which he obtained in Mexico, but he complains that the fruit does not meet his expectations. Let him console himself, since we have seen that the same results happened to the farmers of Poland; and if Mr. Goodrich replants the potatoes which he has thus obtained in succeeding years, success will crown his efforts.

The reason why the potato does not come to maturity the first season is, because the seed is obtained from a country almost tropical, and has not

power to develop itself as it should do. The fruit is not more than half matured, and a second season is necessary for it in the temperate zone. A single season in the torrid zone is as efficacious, in the development of fruit, as two seasons at the north. Farmers should not abandon their experiments on account of the want of success in those of Mr. Goodrich, but continue their endeavors to save the potato from destruction.

In cultivating the potato, it should be remembered that it is capricious in its nature. It should not be planted two successive years in the same soil. The land should be well manured before planting, and the manure well rotted. The soil, if fertile, should not lack manure, and a gravelly soil requires it, but the latter produces a fruit more farinaceous and more savory. If planted soon after the ground is thawed, it will ripen by June, and then it should be harvested. They should then be placed in a heap, not too much elevated, and after several days they should be removed, separated from earth, and placed for the winter where they will be safe from the frost. The potato, when planted at the beginning of June or the end of May, ripens by the end of September. They should be harvested in dry weather.

As soon as the stem is out of the ground, it should be kept free from weeds, and as it increases in height, the root should be covered with earth. Any one may satisfy himself that cultivation with the plough is less beneficial than with the hoe, although cheaper for the farmer. The cutting off the flowers to concentrate the juice in the fruit, is not wise. It is true that the flower absorbs the juice and diminishes the vegetation of the fruit, but the stem which remains absorbs bad air, hydrogen gas, and communicates it to other parts of the plant. Instead, therefore, of cutting off the flowers, it is better to bury them in the earth, and thus they are destroyed, and the stem dries with them.

If it is desirable to have the potato less moist, for a new planting, or for sale in the spring, to preserve them from frost, a sort of cave may be built in an elevated and dry soil, with planks, and the potatoes placed in it, and they may be covered with boards and the dried moss or straw, and then with earth, making a kind of hillock. A layer of lime will absorb the water occasioned by a thaw. When thus prepared, the fruits that are placed in it will be kept as sound and fresh as they were at the harvest. If kept in these caves in the earth without boards, they will put out buds and lose their vital force.

To obtain seed, choose a rich soil, not too highly manured; plant in the month of April; keep the young stems free of weeds; give them free growth, and let the fruit ripen on the stem; dry the seed in the shade, and preserve it in a dry and warm place.

Potatoes, besides being a pleasant, wholesome, and useful article of food in the family of the farmer, will serve him also with nourishing feed for pigs. So, too, in the confection of this tuber, starch is produced equal to that made from wheat. The process is as follows:

The potatoes are carefully separated and well washed. They are then grated into a vessel of water, and then are pressed and left to deposit at the bottom the farinaceous parts. The water is then poured off, and the portions of the farina that have thus been separated are pressed out, cut, and are dried in the sun. This gives starch. This mass, being broken up and sifted, gives farina. At the beginning it is necessary to hasten the process, to guard against fermentation; for starch, when left in water, will ferment. The farina of the potato can be mixed with other flour in the preparation of bread, and when so mingled it makes an excellent pudding with eggs; and if we take

the white of eggs and knead this farina with them, and paste will be formed, which, when coarsely grated and dried, makes a transparent gruel.

In cooking this, it is mixed with milk, and seasoned with sugar and cinnamon; or it may be mixed with water, with a due quantity of butter, and seasoned to your taste; or, in a beef soup, it may supply the place of vermicelli.

SANIEWSKI FELIX.

*May*, 1855.

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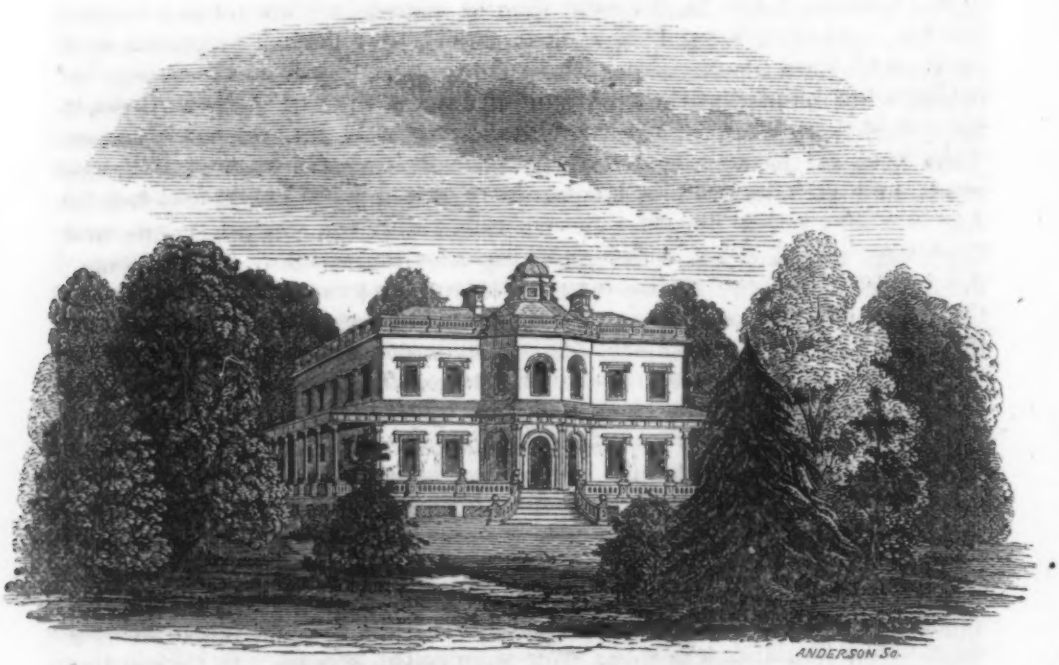
## A COUNTRY SEAT ON THE HUDSON.




MESSINA—THE COUNTRY SEAT OF J. R. LIVINGSTON, ESQ.

WHOEVER has not seen the country seats on the upper side of the Hudson knows nothing of the finest specimens of rural residences in America. There are in the neighborhood of Boston, many beautiful villas and cottages, designed in admirable taste and kept in the highest order, that are indeed admirable in every respect; but they, like more solitary specimens of the same kind, in the environs of many of our cities, are only suburban residences of a few acres. There are, in various parts of the country, many gentlemen's large seats, well laid out, with lawns, pleasure-grounds and gardens, in a simple and unpretending manner, highly creditable to the possessors. But nowhere in America are there to be found country residences, where nature has done so much to assist man in his attempts to create a beautiful home, as in what may be called the upper terrace of the Hudson. This includes a hill of land on the eastern shore, extending from Hyde Park to Hudson city, a distance of about 50 miles.

The peculiar advantages of this part of the river are these: First, the finest mountain and river views in the country—the river being the Hudson, in its loveliest portion—sometimes two or three miles wide—indented in out-

line, and varied by numerous islands; the mountains being the Catskills—their highest summit 3000 feet high—near enough to give a character of grandeur to the scene, and distant enough to possess that blue haze of atmospheric distance, which makes a mountain a bit of poetry, instead of a bare reality of rocks and trees in the landscape. Second, they have the advantage of having been held as country seats since the first settlement of the river—with much of the fine natural beauties of wood and water preserved and heightened by the fostering spirit of taste, rather than despoiled by the avaricious spirit of the mere tiller of the soil.

For almost the entire distance of this fifty miles, the east bank of the Hudson is one line of country seats—varying in extent from 50 to 500 or 600 acres. Instead of having the same general features of interest and beauty, nothing is more striking to the picturesque tourist than the highly *varied* character of these places. Every mile seems to present new groupings of headland and foreground, some new combinations of wood, water and mountain—so that no one who has seen one or two places can imagine with certainty what will be the aspect and picturesque character of the next residence. The enchanting beauty of the Hudson itself is varied and heightened, too, by its peculiar life and animation. Snowy sails, sometimes singly in calms, and sometimes floating along in the light breezes like troops of white swans; swift steamers freighted with throngs of busy and curious people; huge clusters of freight barges, loaded down with the produce of whole countries; and finally, stealing along under the high wooded banks, the river railway, whose trains fly along between the commercial and political capitals of the State at the rate of thirty to fifty miles an hour—all of these give to these finest seats on the Hudson a completeness of interest which the traveller looks in vain for anywhere else in America.

Among the finest of these residences, Montgomery Place, Blithewood, Ellerslie, Hyde Park and others, have been already described, and some of them illustrated in various other works of ours. Persons wishing to see the finest specimens of landscape gardening in the country, naturally go to these places, to study them as the best examples of the art, and there are few places, out of England, where the lover of embellished home scenery can find so much gratification and instruction.

About the centre of this upper terrace lies Messina, the seat of the late John R. Livingston, Esq., a sketch of which we present our readers this month. This house is one of the noblest in its proportions on the whole river, and is worth an examination as a specimen of a first-class mansion in the country. It was built by Mr. Livingston after his return from France, some years ago. He was so much pleased while there with the residence of Beaumarchais, near Paris, that he determined to model his home upon it. This accounts for the air of a French château, which we discover in some of its features. The design was, however, really drawn by an English architect, Brunel, the celebrated architect of the Thames tunnel—who came out to this country and erected two or three residences for different members of the Livingston family. The plan of the interior is spacious and elegant—the rooms large and finely proportioned, uniting some of the best features of both the English and French residences.

Finely varied and extensive grounds surround the mansion at Messina. There is an abundance of foliage and fine old trees, the scenery is beautiful, and the neighborhood most picturesque and interesting. Though not at present in the high condition of some of the places we have just mentioned (owing to the want of personal interest, consequent upon the declining health,

of the late proprietor,) it could readily, in the hands of a person of taste and fortune, be restored to its former high keeping. As it is but rarely one of the first class residences is to be obtained, we believe we shall render a service to some of our numerous readers who are annually settling in the country, by drawing their attention to a site that has long been considered one of the best in the Union.—*Horticulturist.*

We are indebted to our friend Allen, of the *Genesee Farmer*, for this engraving.

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## CALIFORNIA WHEAT CROP.

The wheat crop of the State for the present season has been a subject of much discussion. Our last files of San Francisco papers tell us that during the harvest, parties traversed the State for the express purpose of ascertaining the condition of things, and that the following is the result of their investigations as to the extent of the crop:

| Counties. | Acres planted. | Average. | Wheat, bushels. |
|---|---|---|---|
| Marin, | 335 | 30 | 10,050 |
| Sonoma, | 16,353 | 23¼ | 380,207 |
| Napa, | 17,000 | 20 | 310,000 |
| Solano, | 6,214 | 25 | 155,350 |
| Yolo, | 9,980 | 25 | 249,500 |
| Yuba, | 3,655 | 22½ | 82,237 |
| Butte, | 3,725 | 22½ | 83,812 |
| Placer, | 1,545 | 20 | 30,900 |
| Sacramento, | 3,415 | 25 | 85,375 |
| Calaveras, | 2,142 | 22½ | 48,195 |
| San Joaquin, | 11,340 | 28¼ | 320,355 |
| Stanislaus, | 4,295 | 14¾ | 63,350 |
| Mariposa, | 2,365 | 15 | 35,475 |
| Tulare, | 2,920 | 10 | 29,200 |
| Contra Costa, | 3,785 | 21½ | 81,377 |
| Alameda, | 15,490 | 40 | 619,600 |
| Santa Clara, | 22,745 | 20 | 453,900 |
| Santa Cruz, | 6,530 | 50 | 326,500 |
| Monterey, | 745 | 40 | 29,800 |
| San Francisco, | 445 | 30 | 13,350 |
| Total, | 135,024 | 258-15 | 8,439,533 |

During the year 1853 the imports of flour into the State were 299,547 bbls. and 199,143 sacks; for the year 1854 the imports were 150,420 bbls. and 67,349 sacks. Thus the breadstuffs trade of California has been completely revolutionized, and but a comparatively short period can elapse before the importation of flour from other parts must cease. The crop of the present year is not so large as some exaggerated estimates early in the season made it, nor is the yield per acre so great; but the progress made is remarkable, and shows the capacity of the State.

## THOROUGH CULTURE—METHOD OF ANALYSIS.

The expense of a careful and reliable analysis deters many from adopting that mode of ascertaining the condition of their soils. In the *Northern Farmer* we find the following directions for investigating this matter, which, after a few trials, will not be very troublesome to a man not specially versed in chemical manipulations. We copy it for the benefit of those who wish to try it, and also to show to all who complain of *prices*, that a very accurate measurement of each element is not a matter to be disposed of in a few hours, and that it ought to be paid for accordingly.

In order to get a knowledge of the quality of soil, the portion to be analyzed should be taken from three or four inches below the surface, and should be placed in the sun or in a warm room, till it feels dry to the touch. Then weigh accurately 200 grains of it, and pass it through a common sieve, carefully weighing and noting down on paper what remains. What goes through this sieve, put into a fine wire or gauze sieve, weighing and noting as before. What passes through the last sieve, put into a glass tumbler and fill it nearly full of pure water, stir it for two or three minutes, and then let it rest for half a minute, pour off the water, retaining what has settled, and weight it. This will enable you to determine the texture of the soil and its productiveness. If a large portion goes through the two sieves, and remains suspended in the water, the soil will be productive. This a very important point for a man to understand, when he is purchasing a farm. Some of the most productive lands in our country are not so rich in vegetable and animal matter as other lands which are less productive, but they are of a finer texture, which enables them to exert a more thorough chemical action on substances brought into contact with them, so that these are more readily absorbed by the roots of the plants, and afford them more nourishment.

In order to ascertain the ingredients of which a soil is composed, weigh 100 grains of it that have passed the second sieve as above described. Place this on a piece of white paper in an oven, or on a stove as hot as it can be made without scorching the paper. After this is dried thoroughly, weigh it again, and the loss of weight will show the amount of water it contained, and indicate its capability of retaining moisture, which is a property essential to its productiveness. To determine the amount of the vegetable and animal matter it contains, having noted the weight of the soil thus dried, place it on a sheet of platina and hold it over a hot fire, stirring with a metallic rod until no blackness appears in the mass. If it contains vegetable matter only, the gas emitted will smell like burning peat. If it contains animal matter, the smell will be like that burning feathers. The loss in weight will show the amount of animal and vegetable matter contained in the soil, that can be rendered useful as food for plants by the action of water, air, and heat. To ascertain the quantity of lime, put one quarter of a gill of muriatic acid with an equal quantity of water into a glass tumbler, and set it on the scale and balance it accurately. Then weigh 100 grains of the soil dried as above directed, and put it into the acid and water, and let it remain undisturbed until the effervescence has ceased, which may take two or three hours. Then see how many grains it will take to balance the scale. If it requires ninety-four grains, six grains of carbonic acid have escaped. Now, as lime contains about forty-three per cent of carbonic acid, the amount thus liberated shows that the soil contains merely seven and a half

per cent of lime; and such a soil, if rich in vegetable and mineral matter, is regarded as the first quality wheat-land. Now, to ascertain whether iron exists in the soil, dip a piece of oak bark into the tumbler, and it will be colored red if there is iron in the earth. To determine the quantity, pour off the acid carefully and put into it the prussiate of potash until it no longer forms a blue precipitate; let it settle, then drain it off, and heat the deposit which is oxyd of iron, to redness, and let it cool and weigh it. To ascertain the quantity of gypsum or plaster, put 100 grains of the dried earth into a crucible with one third the quantity of pulverized charcoal. Keep it in a red heat for half an hour more, filter it, and let it stand in an open glass dish for three or four days, and a white precipitate will be formed, which is plaster. Dry and weigh it to find the amount. These rules of analysis might be extended to the reduction of soils to their simple elements; but as we proceed, the process becomes more and more intricate, and the results less useful to the farmer. What has already been said, will enable the farmer to form a general idea of the nature of the soil and its adaptedness to procure crops. As I am not able to say all I wish in relation to deep ploughing and stirring the ground in dry weather, and the use of certain manures, I shall reserve my remarks for a future article on these subjects.

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## CULTIVATION OF COTTON IN ALGERIA.

The *Moniteur* publishes a long report from the French Minister of War to the Emperor, on the cultivation of cotton in Algeria. It begins by saying that his Majesty, with the view of encouraging that cultivation, had determined, by decrees of the 16th October, 1853, to give from his privy purse 200,000f. a year, for five years, to the planter who might produce the largest and best crop of cotton. It then states that this measure has already produced excellent results, inasmuch as in the course of last year, notwithstanding the unfavorable state of the weather, "the plantation cotton plants had assumed a large development," and that "Europeans and natives zealously rivalled each other in its cultivation." The Minister proceeds to give a report from the jury charged to examine the specimens of cotton sent to compete for the prize. After stating that the Arabs in the time of the Turks had cultivated cotton on a very small scale on the Tell, and still continue to do so in the neighborhood of the Collo, and after discussing at some length the different modes of cultivation—this report says, that in 1853 the cotton plantation covered about 530 hectares (the hectare is 2½ acres) and that in 1854 they extended to 1720 hectares, exclusive of some made by the natives at Biskoa. In this total of 1720, the province of Algeria is down for 653 hectares, that of Oran 802, and that of Constantina for 265. Eleven planters had presented themselves as competitors for the Emperor's prize, the extent of their plantations being rather more than 316 hectares. M. Masquelier, Jr., colonist of Saint Denis du Zig, in the province of Oran, and Si-ali-ben-Mohammed, caid of the circle of Guelma, were considered the best *ex æquo*. In consequence, the jury proposed that the prize should be divided equally between MM. Masquelier and Si-Ali, and that in addition each shall receive a gold medal. The Minister recommends his Majesty to sanction this award, and the *Moniteur* announces that the Emperor has done so.

We are informed that by order of the French Minister of War, 124 bales of cotton from Algeria, the produce of 1854, were sold publicly at Havre on the 12th of February, by Messrs Masquelier & Co. These cottons, gathered in the provinces of Algiers, Oran, and Constantine, consist of 77 bales of long staple and 47 bales of short staple.

The information forwarded to the French administration concerning these cottons (says the *Moniteur*) represents them as excellent in working quality, and beautiful to the sight. There is therefore no doubt of their being bought up by our cotton-spinners, who already gave such a welcome to the Algerine cottons of the last growth, with a view of showing their various uses in the manufactures at the Universal Exhibition.

To help this useful manifestation, the War Department has taken measures for reserving a suitable place in the Algerine compartment of the Universal Exhibition for every article manufactured with Algerine cotton which our manufacturers may be willing to place at its disposal for this purpose.

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## ECONOMIC CULTIVATION.

We have repeatedly seated ourself with the intent of writing upon the best mode of cultivating the various crops, and almost as often have we actually had our attention turned to and written upon some other topic. The reason is this: No one, except the favored few who have all the means at command needful in carrying out their plans of farm operations, can do half as well as they know how to do. Their land is poor, and they have not the means of enriching it. Labor is dear, at least when measured by their means, and they can not afford to hire it. Tell a man that a purse full of gold is only an inch beyond his utmost reach, and you do him no good but to excite feelings of discontent and envy, and even lead him to forego certain improvements which are within his reach, because they pay so little compared with what he is really anxious but unable to do. Poverty is a terrible burden, and nowhere is it felt more than among intelligent farmers.

Notwithstanding these difficulties, we would now urge this class of farmers, first, to expend their labor and their fertilizers upon a much smaller quantity of land than is usually done. Instead of planting five acres of corn, plant two, or one even; and plough and cultivate this small field to the entire neglect, if need be, of other acres. If those lie fallow, it will be useful to the soil, and at least no money will be wasted on them.

We say to such farmers, in the second place, you can do more than you have done in the preparation of various composts. There are very few farmers who can not double and treble the quantity and value of those necessary means of restoring vigor to worn-out and barren soils. By diminishing the extent of surface under cultivation, and by proper industry in preparing composts, there is scarcely a farm in the country that can not be made to produce its sixty, and seventy, and eighty bushels of corn to the acre. And even though one acre only is brought up to this desirable condition, a series of years will suffice to bring the whole farm to a high state of cultivation. If only small fields are made thus productive, the hopes and courage of the farmer will be thereby excited, and he will stand up manfully among men, and tell of his success as well as they.

We would NOT advise farmers of *limited means* to buy guano nor phosphates at any thing like their present prices. Pay your poorer neighbor his six or eight shillings a day (if you can not *exchange* work with him) to help you collect leaves from the forest, mud from the meadow, carting the latter only after it is tolerably dry, peat or marl from the bog; and if you can buy barn-yard manures, mix them with turfs, sods, roots, weeds, dirty straw, spoilt hay, chips that are unfit to burn; and if you are conveniently situated for it, get sea-weeds from the sea-shore, oyster-shells, old bones, horns, etc., etc. Dead animals are of great value. The offal from a slaughter-house, worthless scraps of hides, BONES, etc., etc., should be used only with large quantities of common soil, or of some other solvent. Not one in a hundred turns to the best account the contents of privies, hog-pens, soap-suds, and other kinds of waste.

Pardon us for asking why will you tax yourselves so severely by neglecting any of these modes of improving your lands? It may be only such neglect that keeps you in poverty; and though you enter upon the work with many painful doubts in relation to the result, we will assure you against loss from any such operations, if conducted with tolerable discretion.

Now is the time to commence this system of operation for the next year. On every leisure day, let the time be occupied in these preparatory labors. Every hour thus spent is worth something, and will tend to fill your purse at the time of harvest.

Almost all farmers sadly neglect their barn-yard manures. Were these properly cared for, their value, as a whole, would be more than doubled.

Having thus suggested the means by which manures may be provided, the next inquiry is, how and where shall they be used? Perhaps we are unable to give the information that many would desire, for reasons suggested in the last number. Perhaps you have an enclosure that for many years produced very large crops, and you just looked on and watched your opportunity to take from it the most you could get, returning nothing to it. It may be that it is so situated that it is almost able to take care of itself, like much of the interval on the Connecticut, which is annually enriched by being overflowed. If this is so, we should labor to hasten this process of improvement, and should do all in our power to get this soil back into the condition of a fertile field. When this is accomplished, take the next promising lot, leaving the more desperate cases to the last. When you plough your clayey grounds, fill in, without stint, a sandy compost. If the field is sandy, plough in a clay compost. This need not be a costly job, but generally is practicable for the poorest farmer. If you have a boggy meadow, a thorough ditching will be a part of the process necessary in reclaiming it, while the material thus thrown out is exactly what some other soil most needs. Compensations are not found only in the structures of animals, but they occur in almost every farm the world over.

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RECEIPT FOR MAKING LIQUID OPODELDOC.—Take two quarts of proof whiskey, or other proof spirits, warm it over coals, being careful to prevent a *blaze*. Dissolve in it a pint of soap; when cold, put it in a bottle and one ounce of camphor. It is then ready for use. This is an excellent remedy for sprains or bruises, and should be kept by every owner of horses.—*Tippecanoe Farmer.*

## CORN—ITS CULTURE, VARIETIES, AND PROPERTIES.

DIFFERENT varieties are to be preferred for different uses, and under different circumstances. That best suited for the table will not be the best for general cultivation, nor is that which makes the best bread the most efficient in fattening animals. The principal varieties cultivated in the United States are given in the N. Y. State Agricultural Society's Report for 1853, from which we make the following abstract.

### THE YELLOW VARIETIES.

1. Golden Sioux or Northern Flint corn, derived from the Sioux Indians in Canada; 130 bushels have been raised to the acre.

2. King Philip or Eight-Rowed Yellow corn, named after the celebrated chief of the Wampanoags. A hardy plant, grows about 9 feet high, stalks small, ears 10 to 14 inches in length.

3. Canada corn or Eighteen-Rowed Yellow, smaller, earlier, and more solid than the preceding, contains more oil than any other variety, except the Rice corn and the Pop corn; is highly valuable for fattening, and is grown in many gardens for early boiling or roasting.

4. Dutton corn; first brought into notice in 1818, by Mr. Salmon Dutton, of Vermont; ears from 8 to 12 inches long, 12 to 18 rows, large cob; yields, with good culture, from 100 to 120 bushels per acre.

5. Southern Big Yellow Corn. The cob is thick and long, grains much wider than deep, and the rows unite with each other; their sides fall off almost to a point. The grains contain less oil and more starch than the northern flint corn, comes to maturity late, yields abundantly; much used for fattening.

6. Southern Small Yellow Corn. Ears more slender, and shorter than the preceding; grains smaller; less productive, but ripens earlier; abounds in oil.

### WHITE CORN.

1. Rhode-Island White Flint Corn. Grains about the size and shape of the Tuscarora, abounds in a transparent, colorless oil, which may be easily seen through their clear, pellucid hulls. The farinaceous parts of the grain are white. The flour or meal is more substantial and less liable to ferment and become sour.

2. Southern Little White Flint Corn. The kernels are smaller than the preceding, and resemble them in shape, but are more firm and solid; contain more oil, cob smaller in proportion to the size of the ears, but the yield is less abundant.

3. Dutton White Flint Corn. This does not differ materially from the Yellow Dutton, except in color.

4. Early Canadian White Flint Corn. Cultivated principally for boiling and roasting when green.

5. Tuscarora Corn. Obtained from the Tuscarora Indians in the State of New-York. Ears contain from twelve to sixteen rows, grains nearly as deep as broad, of a dead whitish color on the extreme end, composed entirely within of pure white dextrine and starch, except the germs. It contains nei-

ther gluten nor oil. It is softer and better food for horses than the flinty kinds, and is excellent for boiling when green.

6. White Flint Corn. Ears contain twelve rows, of rather white, roundish, thick grains, which are filled with a snowy white flour, composed chiefly of starch, with neither gluten nor oil. It is extensively mixed with buckwheat, particularly in New-Jersey. Its properties resemble the preceding variety.

7. Virginia White Gourd-Seed Corn. Ears not very long, contain from twenty-four to thirty-six rows of very long and very narrow grains, so soft and open in texture that they will not bear transportation by sea, without being kiln-dried. Grains at the extreme end are almost flat, and grow so closely together from the cob to the surface that they produce a greater yield than any other variety in proportion to the size of the ears. They contain more starch, and less gluten and oil than those of the flint kinds, and from their softness are better feed for horses. When crossed with other grains, a small indention is seen in the ends of the grains when perfectly dry. It matures late.

8. Early sweet corn. One kind of this corn has a red cob, and another kind a white cob. Ears are short, usually contain eight rows: grains, when mature, are of a light color, and become shrivelled. It contains a large proportion of the phosphates, considerable sugar and gum, and but little starch. It is extensively cultivated for culinary purposes. The Shakers prepare it by boiling and scalding when green, separating it from the cob, and kiln-drying for winter use. It is also preserved in cans hermetically sealed.

9. Rice Corn. A small variety, with small conical ears, the grains terminating in sharp points, which give it the appearance of a bur. It contains more oil, and less starch than any other kinds. Is excellent for poultry, from its oily nature.

10. Pearl Corn or Pop Corn. Ears small, grains round, of various shades of color; contains more oil and less starch than any other variety. It forms an excellent dish when hulled and boiled.

11. Chinese Tree Corn. This was introduced by Grant Thorburn, "twelve or fifteen years ago," a kernel being found in a chest of tea. It is a pure white variety, ear about ten inches long, ten rows, grains very closely set, long and wedge form, well filled to the end of the cob, some of the grains slightly indented. The ears grow on the end of the branches. It is said to yield one fourth or one third more than the common varieties. It is better flavored when ground than other white corn, and is excellent for hominy, samp, etc. Generally two ears on a stalk, and often three.

The varieties of corn are very numerous, though but few of them are extensively cultivated in this section of country.

Sweet corn contains the greatest amount of the phosphates, and of course requires more of these elements in the soil. It, in fact, consumes nearly double the quantity consumed by some other varieties. It also contains more sugar and more gum than the yellow corn, though it has only a small quantity of starch.

Rice corn contains but little starch, while it yields the greatest quantity of oil.

Southern corn contains more starch than the northern.

Pop corn contains but little starch.

According to Prof. Salisbury, Ohio dent corn contains the greatest quantity of sugar and starch, and small 8-rowed corn, of gluten, and also of oil, and of albumen. Buell's Dutton corn contains the greatest proportion of

water. The same learned Professor found in the variety called Turkey wheat 5.32 per cent of oil.

According to Gould, if Square corn is worth fifty cents a bushel for fattening properties, Flint corn should be estimated at 58 cents. The Tuscarora corn contains but very little oil, an important element for producing fat, but of little worth in making bread. This variety is valuable in the manufacture of starch.

Gluten is essential in the production of muscle, and hence, for working animals, the Yellow Northern corn is preferable to the Southern, which abounds more in starch.

Of twenty-seven varieties examined by Prof. Salisbury, the Rhode-Island Sweet corn was found to be richest in albumen and oil, and most deficient in starch.

Prof. Salisbury found the White Flint corn to consist as follows:

| | | | |
|---|---|---|---|
| Silica, | 9.50 | Potash, | 23.92 |
| Alkaline and earthy phosphates, | 35.5 | Soda, | 22.59 |
| | | Chlorine, | 0.405 |
| Lime, | 0.16 | Sulphuric acid, | 4.385 |
| Magnesia, | 2.41 | Organic matter, | 0.367 |

Prof. Shepherd gives the analysis of Southern corn as follows:

| | | | |
|---|---|---|---|
| Silica, | 38.45 | Carbonate of lime, | 2.50 |
| Potash, | 19.51 | " magnesia, | 2.16 |
| Phosphate of lime, | 17.17 | Sulphate of lime and magnesia, | 0.79 |
| " magnesia, | 13.83 | Silica mechanically formed, | 1.70 |
| " potash, | 2.24 | Alumina and loss, | 1.65 |

In making mush, yellow corn absorbs water more freely than the white, the difference being about one in seven. The yellow meal gives less bran when sifted, than does the white, by about one twentieth.

The yellow is harder, drier, keeps more easily, and weighs more per bushel than the white, and produces a greater quantity by weight to the acre.

Sixteen gallons of oil are extracted from one hundred bushels of corn. By this process it loses in fattening capability, but, when used in bread, is more easily digested.

Northern corn grows well at the South, but Southern corn will not generally ripen well at the North. This is in accordance with the general rule of vegetation. Trees for ornament or for fruit may be profitably moved southwardly, but seldom flourish if carried towards the north.

Corn should be planted at a depth of about one inch. An experiment is described as having been made in Connecticut, in which the corn was covered at a depth of three inches. It came up and grew well at first, but soon ceased to grow for a while. It was discovered that new roots had been formed near the surface, and all below these had perished. The more shallow the covering the better, provided the grain is not thereby so exposed to the heat of the sun as to dry and harden, when it ought to swell and soften as a pre-requisite to germination. It will not vegetate at a higher temperature than 110° Fahrenheit, nor below 55°.

The soil should be deep and mellow. It may be sown or planted in connection with ashes, plaster, or prepared bones. It may be sown in drills or planted in hills. If intended for green fodder, drills are most expedient. If

in hills, allow four stalks to each. If in drills, they may be single, double, or treble. If the first, they should be 3½ feet apart; if double or treble, plant so as to form lines diagonally as well as longitudinally. Thus:

. . . . . or thus: . . . . . . . . . . . . . . .

the rows being 6 inches apart, the plants 9 inches, and the centre of the drills 3 feet.

If corn is planted in hills by securing regular rows in different directions, the cultivator may be run through in different directions, and hand labor thus be saved. If planted by hand, the rows may be marked off by a *marker* or a very coarse hay-rake, having the teeth at the distance required for the rows.

If the stalks are to be taken into the account, it is found that the stalks of the small Northern corn contain more desirable and palatable food than the large Southern. On analysis, they render a larger proportion of sugar.

In the fattening qualities of the various species, there is also a difference, although experiments on this point are not so numerous as to be received as authoritative. It is unquestionably true, however, that corn should be cooked before it is given to animals. From some experiments it appears that three bushels of meal cooked are equal to four and a half of hard corn. This gives a result *in value* as follows: If fed raw, a bushel of corn, when made into pork, is worth only 38½ cents; if cooked, it is worth 55 cents. But we have often expressed our belief that all such experiments should be received with great caution. No one experiment of this sort can be relied upon for general application. Hundreds ought to be made and compared before any great confidence can be placed upon them.

Corn is rich in phosphates, as already suggested, and hence it is that great caution is necessary in feeding it to animals, and especially to horses. These salts are chiefly appropriated by the bones and a too free use of them produces disease in and about the joints.

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FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

## THE OSAGE ORANGE.

MR. EDITOR: Almost every thing that pertains to the interest of the farming community is spoken of in your journal, such as the best mode of obtaining the largest and most profitable crops, the best kinds of cattle, swine, horses, and poultry, etc., the best kinds of ploughs, harrows, cultivators, and finally, all kinds of farming tools, the draining of swamp lands, etc. If I mistake not, your correspondents have never said a word about hedging with the osage orange or any other mode of fencing without rails or boards. The great and general study of the prairie farmer is to contrive how to fence his land upon the large prairies. If some of your correspondents who have tried the osage, would give their mode of culture, and circulate it through your journal, it would be a great pleasure to many of us here in this prairie country.

L. S. SPENCER.

*Lynn, Warren Co., Iowa.*

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

## A GIRDLED TREE STILL GROWING.

Mr. Editor: Will you, or some of your correspondents, give me an explanation of the following?

In my orchard is an apple-tree, the body of which is about three inches in diameter. Two years ago I took off most of the top, and inserted scions of other fruit. Last spring, 1854, I found the mice had girdled the stem, entirely removing the bark for at least five inches. I placed earth about the exposed portion, and left it to die. I find now, May, 1855, that the tree seems to be vigorous, that it made the usual quantity of wood last season, and that it promises to bear fruit this. The wood from which the bark was removed is dry, and apparently dead. No roots have shot out from the bark above.

Now the query is, How does the tree obtain nourishment? The sap does not pass up through the bark, nor through that portion of the wood called the sap, for it is dry and apparently lifeless. Can it pass through the heart of the stem? If not, it must derive its nourishment solely from the atmosphere, through the leaves. That it will *continue* to live, I do not expect; but how has it lived and thrived thus far, that is the question?

Now, that I may give as much as I receive, suffer a word of exhortation about young trees. Now is the time especially to look after and care for your fruit-trees. The caterpillars should be stirred up with a long pole, or some other instrument of torture. I go for persecuting the "varmints." I think intolerance may better be expended upon these pests than upon foreigners of our own species.

He who has but few trees can easily keep them clean. He who has many can still better afford it.

Young trees should be washed at least twice during the season. First, let the scraper pass around with his saw and pruning-knife, removing all moss, dead bark, suckers, and limbs which interlace or injure others. Then let a wash of soft soap and water, about one pint to a pailful, be applied with a sponge, and the work is done. A few dry ashes about the roots will annoy the insects, and promote the growth of the tree. R. B. H.

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## MEXICAN GUANO.

The opinions of Dr. Jackson and Dr. Hayes, of Massachusetts, given below in respect to the subject of our title, coïncides exactly with what we have many times stated to friends who have made personal inquiry of us in relation to it. The extract is taken from a Boston exchange:

"Dr. A. A. Hayes, State Assayer, said the resources for supplying the waste incident to culture, are not abundant. We have not the seasonable rains of England, and can not draw our rules from the method. Lands do not run out. They have not *time* to recuperate the soil by means of decomposing rocks. The time is too short, unless we make up the supply by artificial means.

There is a new variety of guano found on the Bird Islands, on the Atlantic side of South America. The proportion of phosphate of lime in this is very large, 60 per cent of the whole.

He had no confidence in the ammoniacal contents of Peruvian guano. This guano from the Atlantic side furnishes a much larger quantity of phosphate than the Peruvian.

No manure can compare with barn-yard manure, weight for weight, in equal states of dryness.

This guano, used in compost, offers a resource long needed. It may be used by sowing it upon the snow and allowing it to find its place.

Dr. C. T. Jackson, of Boston, said he had some practical knowledge of this new kind of guano. It is rich in phosphates. Some specimens contain ammonia.

The action of manures is quickened by rendering them soluble; but if they are made soluble too suddenly they are washed away.

Nature disengages potash slowly from feldspar. We must learn a lesson from this. Leached ashes are about as good as guano. Ashes is what we know as once the saline matter of plants.

Leached ashes operate almost as favorably as unleached ashes. There is a large proportion of phosphates and silicates in them. He was surprised to see fish neglected and thrown away in so many places. Dr. Hare had a method of dipping fish into a mixture of sulphuric acid and water. There was no smell from them, and when dry he would grind them up, and make a guano, without depending on the birds.

He would put on guano both ways; would plough in a part and harrow in a part. Barn-yard manure retains moisture. If the season is moist, the use of guano is of more avail. This may account for some of the discrepancy in the reports about the use of guano.

He would join his friend, Dr. Hayes, in recommending this Mexican guano to be put in compost."

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FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

## SAFFRON.

This article comes to us from the East. It is highly prized in Europe. I remember that, in my youth, saffron was very dear in Poland, a pound costing ninety francs, or sixteen dollars. But industrious France engaged in this trade, and commenced the cultivation of this plant: and throughout the environs of Pithivier, in the department of Loirret, whence it was sent into Poland and was sold for that of the East, although it had less strength, on account of the cheapness of the price for which it was sold.

In 1834, in France, I examined the mode in which this was cultivated, and here note the results which I then obtained.

Saffron is that portion of the corolla termed the ray, and is cultivated by transplanting the tuber. It requires an argillacious, marly soil, and should be cultivated without being manured. The tubers are planted at a distance of ten fingers, and three fingers in depth. They produce a stem which after two months produces a flower, and of the ray petals of this flower the saffron consists. The petals are plucked and are collected in a sieve, and then dried in

the shade, as the rays of the sun dissipate their strength. After the saffron is gathered, the stems are dug up without breaking them. The vines are then cleaned and preserved for the next year. They should be kept in a dry and warm place where there is no odor.

After the saffron is gathered, the flower and stems are cut off near the ground, and the plant is left to vegetate until the next year, without any other care than that of keeping it free from weeds; and it will produce a crop in the second year, and even in the third, as good as in the first.

Saffron should be planted in April, and the harvesting is in September. The land used for this plant, after three years, should be cultivated with other crops for six years.

The petals of the flower should be dried by being spread upon a table covered with a white cloth.

The saffron of France was sold in 1828 at forty francs, or eight dollars, a pound. In 1850, when the product was very much increased, it was not worth more than twenty-five francs, or five dollars, a pound. It is inferior to that from the East, but has the same properties.

I have seen and examined the saffron produced in the State of New-York. It is deficient in sweetness and in odor, compared with the French. This difference is probably the result of a different kind of cultivation.

SANIEWSKI FELIX.

[The above was translated from the French manuscript by the editor.]

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FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

## THE SEASON CROPS, PRICE OF PRODUCE, ETC.

MESSRS. EDITORS: The winter commenced with a heavy snow-storm on the 3d of December, which fell about two feet deep, and made beautiful sleighing till the last days of the month. From about the 26th of December till the 12th of January, the ground was generally bare, when the snow again fell. February was the coldest, stormiest February since my memory. From my record I find, Feb. 6th, mercury down 22 degrees below zero, and the snow about two feet deep. March was an uncommonly cold, stormy month, and the first week in April nearly as cold as mid-winter. The weather moderated toward the middle, with uncommon hard showers. May came cold and wet, and remained so till about the 18th, when it became dry, and seriously dry, till the last of the month, with a frost about every other night, but not hard enough to do much damage. June came in cold, with a fine rain on the 2d and 3d; and now, June the 6th, there is an appearance of a great storm, with weather rather cold for this season.

From the great amount of sleighing, the farmers and lumbermen had a fine chance to draw their produce to market, and to get in a larger stock of logs than any year for ten years previous. Every mill is crowded. The price of lumber down the Susquehanna is lower than last year, namely, $12 per thousand, or $2 lower than last year. Hemlock lumber from $3 to $4 lower, namely, from $5 to $6 per thousand. Shingles, good, $18 per thousand; and square timber worth not enough to pay for running, although more run than ever before in one year.

Of the crops, wheat and rye are generally fine, so far. Rye is very promis-

ing. Of winter wheat, there was but little sown, in consequence of the ravages of the wheat-fly last year. A few fields of oats and barley begin to appear, and look well; but a majority of oats is only now up, in consequence of the cold, dry weather last month. A large amount of oats sown. Corn is generally up, with the exception of a few fields on the high hills; and, considering the season, it appears well, and an unusually large quantity is planted. In consequence of the very high price of grain for the last year, there has been an uncommon amount of grain put in the ground. A few meadows and pastures are good, but many are injured by the late dry, cold weather, and a large amount of grass-seed did not come up last year. We find it is useless to sow clover, except in very dry ground, on the account of its freezing out in winter.

I have reason to believe that cattle and produce are dearer and scarcer than before in twelve years. Wheat at $2.50, but no more for sale; rye, $1.25; corn, from $1.25 to $1.50; oats, from 65 to 70 cts; potatoes, from 75 to 87 cts—have been $1, and now rising again; hay, from $12 to $20 per ton; butter, from 18 to 22 cts. per pound; common working oxen, per yoke, from $125 to $150, and common horses $150 per head; cows, from $25 to $40 per head. R. Howell.

*Nichols, Tioga Co., N. Y., June 6th*, 1855.

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## PAINT FOR HOUSES.

We recently published a few directions on this subject, which seemed to us important. One who seems to be versed in the subject, as a practical painter, makes other suggestions, in the *Indiana Farmer*, which we are disposed to indorse. He says: "It is not easy matter for some painters who pretend to considerable experience in their art, to paint the interior of a house in a proper manner. White lead and oil, mixed as for outside use, will dry, it is true, and preserve the wood-work; but before three months, the paint will become almost yellow, and have exactly the appearance of being smoked. This is not the case with external painting, because the light and air bleach the paint precisely as it does linen or cotton cloth when exposed in a similar way.

To paint white in the interior of a house, very little linseed oil should be used, except what the white lead was at first ground in. Spirits of turpentine should be the principal fluid used to mix the paint, Japan being added in small quantity as a dryer. The first coat, or "priming," should be mixed with linseed oil alone, being well rubbed down when dry, with sand paper. Two coats should afterwards be put on with the turpentine alone, the last coat being rather the thickest.

To make a very handsome white finish, for parlors and other nice rooms, after putting the paint on very carefully, Gum Demar varnish should be put on over all. This makes a beautiful gloss, and keeps the paint of a brilliant white all the time. Should the paint become dirty, it can be washed off as easily as a pane of glass, using nothing but warm water, as strong soap destroys the varnish. Every house-builder desiring a permanent, brilliant white finish to his rooms, should use this varnish. It answers a very good purpose to mix it in with the last coat of paint, making a much handsomer

finish than when not used at all, but much the best way is to give the entire work a coat of the varnish after the painting is finished and partially dry.

Kitchens should be painted a light slate or lead color, made by mixing a small quantity of lampblack with the white lead; particularly the doors, mantel-pieces, and wash-boards. The floors of porches and kitchens may be painted with the same material, or they will look pleasant and cheerful if yellow ochre is used, ground up with linseed oil and Japan.

In putting on green paint, slate color should first be used as a priming, two coats of the green being added afterwards. Paris green makes the brightest color, and must be carefully ground in oil, adding Japan as a dryer. Chrome green makes the deepest and most permanent color, and white lead is used to temper the paint to the proper hue.—*Ohio Farmer and Horticulturist.*

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## MODE OF RAISING CALVES.

We doubt very much whether any artificial process can be as successful as that designed by the Author of nature. Our wisdom is not wise enough, in our judgment, to criticise Omniscience. But sometimes, for specific purposes, the second-best mode is then and there desirable. We have made this suggestion elsewhere, in reference to the treatment of trees and other vegetable growths, and would apply it here to the subject of our title. Still we can conceive that in certain cases the advice of a correspondent of the *Country Gentleman* may be worthy of attention. He says:

"Among all the various ways for raising calves, described by your correspondents, there seems to be none adapted to the wants of the cheese dairy-man. The farmer keeping thirty-two cows, should be able to raise some half-dozen calves annually from the best milkers in his herd, to supply the place of those failing from old age and casualities of various kinds, and to improve his dairy stock at a cost somewhere near the value of the animal when matured. The idea of raising stock to supply our wants by feeding calves for three or four months on new milk, either from the pail or at the teat, is to say the least, *simply absurd.* One gallon of milk makes a pound of cheese worth to the producer ten cents, or the same value if made into butter. A calf requires two gallons per day, equal to twenty cents. Three weeks' feed at this rate amounts to as much as the calf may be expected to bring at four months age. There is then a loss of twenty cents per day for the remaining two or three months that they are fed, amounting to a loss of at least eight dollars each the first season. In a butter dairy the skim or sour milk may be fed perhaps. Unless there is some cheaper method to be practised, *we* can never render our *city beef-eaters* any relief.

My method is as follows, and calves may and have been raised by it that were very far above the average, even of good lots, at four months. Take the calf from the cow at three days old, and learn it to drink; it will learn far easier then, than at any time after; feed new milk twice a day for two weeks, and once a day one week longer. At two weeks begin feeding once a day, and in a week more twice a day, *porridge*, made of three to four quarts of sweet whey and one pint of meal, of a mixture in nearly equal parts of oats, buckwheat, corn, and rye. Cook as if for one of the

human family. The cost of one quart of this meal, (daily mess for each) may be three cents, which is all the value they consume, the whey being of too little value to make any account of. Give this feed four months, and continue the whey a month longer, always with a good bite of grass, tender and sweet, and no fears need be entertained for the result. The first winter give warm shelter, good hay, and one pint of oats each, daily; and my word for it, you will never be ashamed to have a neighbor call and look at your young stock."

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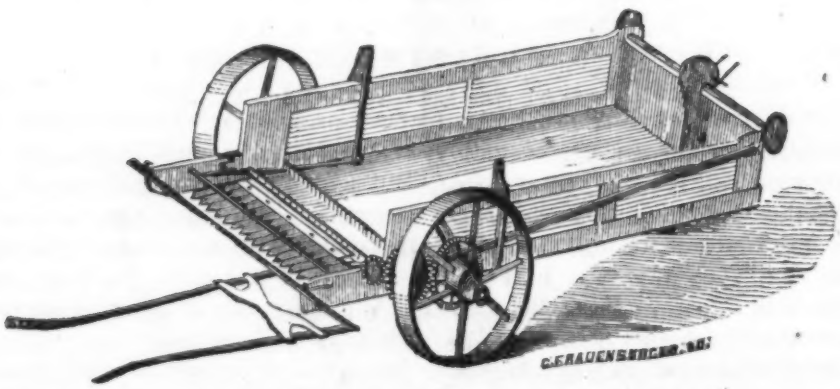
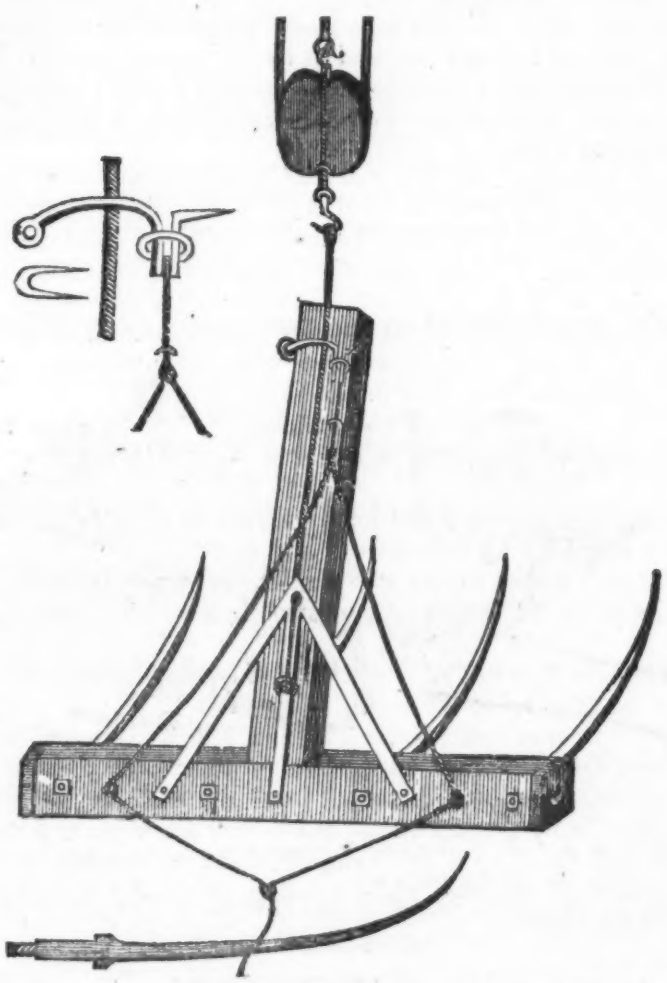
## GRAIN AND GRASS SEED HEADER AND HARVESTER.



We have seen a working model of this useful machine, invented by Mr. T. S. Steadman, of Holley, N. Y., in the possession of our neighbor of the *Genesee Farmer*, and were exceedingly pleased with its operation. The engraving well represents its appearance.

"It is drawn by one horse, which walks outside of the part of the field intended to be harvested. Turning continually to the right, it cuts equally as well when turning a corner as when going straight ahead. The seed heads are gathered by the comb, cut off by the revolving knives, and by a self-raking apparatus attached, thrown to the rear end of the box. By detaching the intermediate gearing wheel, it is immediately converted into a three-wheeled wagon and can be driven wherever wished. By pressing down one or both of the levers shown on the rear end of the box, one or both sides of the comb and cutter may be lowered or elevated at pleasure. The peculiarity of the machine is that it cuts and saves only the heads of the grain or seed, and by an extra pair of wheels, it can be applied to the gathering and harvesting of any kind of grain or grass seed. It will cut from eight to twelve acres per day with ease. All the bolts in the machine are in sight with but one exception, and any common blacksmith or mechanic can repair it, if by accident it should get out of order."

## IMPROVED HAY FORK.



From the same source as the preceding, we have obtained an engraving of this efficient implement, the description being taken from the *American Farmer*. In that journal Mr. Edward Stabler, a correspondent, says:

"We have had it in use several years, and, as now improved in the mode of discharging the hay, I consider it not only a labor-saving, but also a time-saving machine.

"As originally made, (for the plan of which I was indebted to a friend in New-Jersey,) the rope was fastened to the upper end of the handle; and although the hay was raised equally well, it was found tedious and laborious to work the trip cord; and very difficult, if not impracticable, to discharge the hay when and where desired on the mow. In this way its operation was not at all satisfactory.

"By attaching the rope to the handle, six or eight inches from the head piece, instead of the upper end, and passing it along the handle, under the trigger, at this point a slight jerk of the trip cord held by the man on the wagon, instantly changes the fulcrum—of course the position of the fork—and the hay falls. The trip cord also serves to pull back the fork to the wagon.

"I am thus particular in describing both fixtures, as many inquiries have

been made, and perhaps by some who use the original plan. A mere trifle in cost will add the improvement, and, as I think, nearly double its value.

"The 'tackle' is attached to the peak of the rafters, and directly over the centre of the hay mow; the fall rope passes under and near the rafter, to a guide pulley fastened to the upper end of the door post, down by the side of the post to within a foot of the floor, and through another guide pulley; to this end of the rope is attached a swingle-tree, or hook, as may be most convenient in working a horse or yoke of oxen.

"If properly managed, the fork will readily raise from four to six hundred weight of hay at a time (while a hand fork is moving the tenth part of it, perhaps;) and when high enough the horse stops. A hand or two on the mow with forks, sway it backwards and forwards, to give an impulse in the desired direction, when the trip cord, by the strength of a finger, throws it instantly in a compact layer, as taken from the wagon. Considerably more hay can thus be mowed in a given space, with comparatively little manual labor, fewer hands, and in a third or fourth of the time.

Very respectfully, EDWARD STABLER.

"Head of tough scantling, 3½ by 4 inches, 3 feet 3 inches long, with bands at ends.

"Handle 3½ by 4 inches, 3 feet long, inserted at right angles, and braced with 3 iron plates ¼ by 1½ inches.

"Steel prongs ⅞ inches square at shoulder, set angularly in the head, and tapered to the point, 22 inches long clear of head, with screws and nuts at back end.

"As the handle does not raise vertically, the prongs should curve upwards considerably, so as to resist the hay.

"The trigger is very simple—an iron pin ½ inch diameter, bent at right angles, one end driven into the handle, projecting an inch, and ranging down the handle about 2½ inches. A curved iron strap with an eye, and confined at the opposite side by a small staple, passes over the rope, and the other end bent parallel with the pin; a small ring attached to the trip cord slips over both; the tension of the rope while hoisting, effectually fastens it, until the cord pulls off the ring."

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## CHEAP COMPOST FOR CORN.

HAVING received the credit for two years past, of having as good corn as any in our neighborhood, and attributing our success mainly to the use of a single handful of cheap compost, dropped in each hill before planting the corn, we give you a statement as to how we form it.

Supposing a load to contain twenty-five bushels, we take two loads of muck manure from our hog-yard, one load of wood-ashes, and three bushels plaster Paris. Work the parts thoroughly together with a hoe or shovel. Our corn-ground having received a coating of manure before being ploughed, the harrow follows the plough lengthwise of the furrows until the surface is well pulverized. We mark one way for the hills with the shallow furrow of the plough, and then draw a chain the other way, which shows the place for each hill. The compost gives the corn a good start, and the manure helps it out. We have also, for the last two or three years past, soaked our seed-corn in a strong solution of tobacco-water, and have not been troubled much with worms. Let it remain in the solution from twelve to twenty-four hours. —*Country Gentleman.*

## TRAPPING GRUBS AND CUTWORMS.

The following novel method of getting rid of these occupants of a corn-field, was adopted by a correspondent of the Michigan Farmer:

He planted his corn on a clover sod plowed in in spring. While planting he found plenty of the small grubs. The corn was planted about the 20th of May, and as soon as it came up they commenced their mischief. Knowing no reliable or certain way of saving the corn, he concluded to *trap* them. For this purpose he took a round stick three or four feet long, and about two inches in diameter, and, making one end sharp, and taking two rows at a time, he made from two to four holes, four or five inches deep, in or close by every hill. After fixing several rows in this way, he waited to see the result. On examination, he found that almost every hole had one or more worms in it. In one hole he counted as many as six. He then went over the whole field in the same way, and the result was that hardly a hill of corn was destroyed after the holes were made, while his neighbor's corn just over the fence, which was on ground plowed very early, was more than half cut off with the worms. "It might be supposed," says C. Q., "that when the fellows fell into the traps, they would bore into the side and escape; but on watching them I found they would try to climb up the side, but the sides being smooth they always fell back again, when about twenty-four hours of sunshine and starvation would put an end to them. They usually commit their depredations in the night, and while crawling around to find the corn they tumble in." An additional recommendation of this method is, that the birds will not pull up the corn, when they find plenty of *grub* already provided for them.

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## FARINA.

The following account of the manufacture of Farina is from Warren's "Para on the Amazon." It should be remarked that the article so much in use in this country as an article of food, under the name of "Hecker's Farina," is not the Farina of South-America, but is manufactured from wheat:

"The vegetable (*Jatreph amanihot*) from which the farina is made, is, in its natural state, considered quite poisonous, and is entirely unfit for the purpose of nutrition. The means, therefore, by which its pernicious qualities are expelled, and the nutritious principle retained, must be always regarded as a most extraordinary and valuable discovery.

The plant is a native of Brazil, and was known to the natives on their first intercourse with white men. No other vegetable, not even wheat, possesses an equal degree of nutriment, and, together with bananas and wild meat, constitutes the principal item of the native Brazilian's bill of fare. The farina is made from the root, which is first rasped with a piece of indented wood, until it is reduced to pulpy consistence. The juice is then effectually expressed in the following singular manner: Large circular baskets of plaited rushes are filled with the raspings of the mandioca root, and then suspended from the branches of the trees. By means of a considerable weight of stones fastened beneath, the rushes are drawn tightly together, and most of the

liquid squeezed out. After this, the pulpy substance is exposed on skins to the rays of the sun, for the purpose of evaporating all the remaining moisture.

The juice being at length entirely expressed, the pulp is placed on large earthenware pans, and stirred over a hot fire until it granulates; it is then put up in baskets for use."

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## COST OF RAISING WHEAT, CORN, ETC.

THE next volume of the New-York Agricultural *Transactions* will contain a detailed farm account of Mr. William Johnson, near Geneva, from which we gather the following interesting items in regard to the cost of raising different crops the last season. His statement is published in the Journal of the State Society for the present month, and shows very creditably the order and method of Mr. J.'s agricultural operations.

The farm contains eight acres of tillable land divided into nine lots, numbered from one upwards, and accurate account kept with each. The soil is a dry loam, with a clay subsoil, pretty uniform throughout the farm. Each crop is charged with the interest on the value of the land producing it, and with all the labor and material used in its production. Of wheat six acres was sown, the whole expense was $122.40; the product was 126 bushels or 21 bushels per acre; this makes its cost per bushel a trifle over 97 cents. But deducting the value of the straw, estimated at $18, we make the cost of the wheat but 83 cents per bushel. It was sold at $1.81, leaving a fair margin for profit at either figures. But at the price of wheat for many years past the profit would have been little or nothing.

Eight acres of barley cost $102.20 and produced 284 bushels, or 35½ bushels per acre. It cost very nearly 37 cents, and sold for $1.00 per bushel. This produced a greater per cent of profit than the wheat, as we believe it generally has, for a series of years.

Ten acres of corn, on clover sod, cost $153.26. The product was 410 bushels of corn, and $60 worth of corn stalks. Mr. Johnson states the cost of raising the corn at 37½ cents per bushel, but if we deduct the value of the stalks from the whole expense, it makes the cost of the corn but 22¾ cents per bushel. We should be glad of some explanation from Mr. J. on this point, as the value of the stalks and straw may have been allowed to balance some part of the expenses not indicated.

Ten cows are kept upon the farm, yielding an average of 210 pounds of butter each. Mr. J. estimates the product of each cow worth about $54, and the cost of keeping $26.85. It cost 12½ cents per pound to make butter, on Elmwood farm, and we think it can not be sold for less anywhere with much profit. His pork, killed at 9½ months old, fed on milk and fattened with corn, costs 5 cents per pound. The balance over expenses on the whole farm, for last year was $953 42.

Mr. Johnson practises the following system of rotation. First, corn, to which is applied all the unfermented manure he can get. The next spring it is sown with barley at the rate of 2½ bushels of seed to the acre, then sown to wheat in the fall, with a top-dressing of fine manure, of about six loads to the acre. The following spring it is sown with eight quarts of clover-seed and four quarts of timothy, with one bushel of plaster per acre, when it is

allowed to remain three years in grass. The usual product is 55 bushels of corn, 30 of barley, and from 20 to 30 of wheat, per acre. The manure is all kept under cover, and a regular system of underdraining is being carried out. —*Rural New-Yorker.*

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## NATURAL HISTORY OF THE LOCUST.

THE following information concerning the habits of the seventeen-year locust, given by a writer in the *Boston Advertiser*, will be found interesting at the present time :

"The locust's favorite resort is that of a copse of young and rather thin oak wood, where the soil is rather soft and light. They are first discovered in the ground near the surface, in the form of a large white grub or worm, and a quarter of an inch in diameter. Where or in what mode they pass through the chrysalis state, and become fully invested with wings and other members, I do not know; but they are soon found in vast numbers, and in a full chorus of sonorous voices, among the branches of the small trees. They have a distinctly marked W found on the back. In this stage of their lives they do not seem to feed. On opening one, the body appears to be a mere hollow shell, without any feeding or digesting organs. They continue in this state, I believe, about six weeks or two months.

Shortly before their disappearance, many of the small twigs of the young oaks appear to be girdled and partially cut off, and hang suspended from the extremity of the branches. The leaves turn red as when touched by frost in autumn. On examination these twigs appear to be sawed about two thirds off and girdled, so that—the circulation of sap being cut off—it soon dies, and probably falls to the ground during the ensuing winter by the action of wind, rain and snow.

The general belief is that by a curious and remarkable instinct, the insect is led to deposit its eggs in some secure mode upon these small twigs, and then thus partially to sever them from the parent stock, so that by their fall the eggs shall be borne gently and safely to the ground, into whose bosom they are in some form received and cherished, to reäppear in the form of the full-grown locust, after the lapse of seventeen years. I am not aware that this fact of the deposit of eggs upon the falling twig has been verified by actual observation; it is one of the points which require careful examination."

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## PROGRESS OF CIVILIZATION.

In a lecture on what he has seen abroad, Wendell Phillips observes :

"In Italy, you will see a man breaking up his land with two cows, and the root of a tree for a plough, while he is dressed in skins with the hair on. In Rome, Vienna, and Dresden, if you hire a man to saw wood, he does not bring a horse along. He never had one, or his father before him. He puts one end of the saw against the ground, and the other on his breast, and, taking the wood in his hand, rubs against the saw. It is a solemn fact, that

in Florence, a city filled with the triumph of art, there is not a single auger, and if a carpenter would bore a hole, he does it with a red hot poker! This results not from the want of industry, but of sagacity of thought. The people are by no means idle. They toil early and late, men, women, and children, with an industry that shames labor-saving Yankees. Thus he makes labor, that the poor must live. In Rome, charcoal is principally used for fuel, and you will see a string of twenty mules, bringing little sacks of it upon their backs, when one mule could draw all of it in a cart. But the charcoal vender never had a cart, and so he keeps his mules and feeds them. This is from no want of industry, but there is no competition.

A Yankee always looks haggard and nervous, as though he were chasing a dollar. With us, money is every thing; and when we go abroad, we are surprised to find that the dollar has ceased to be almighty. If a Yankee refuse to do a job for fifty cents, he will probably do it for a dollar, and will certainly do it for five. But one of the lazaroni of Naples, when he has earned two cents and eaten them, will work no more that day, if you offer him ever so large a sum. He has earned enough for that day, and wants no more. So there is no eagerness for making money, no motive for it, and every body moves slowly."

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## PRUNING TREES.

The best time for this is when the sap does not flow very freely. If the limbs are cut when the sap is abundant, it will often run down the stump of the limb and the trunk of the tree, producing an unseemly discoloration. If any amount happens to collect in some cavity, it ferments, and is converted into a noxious liquid which injures the substance of the wood. If the leaves are very abundant, they will secure such a flow of the sap into their own tissues, as will prevent any such action. Hence in midsummer trees can be pruned with impunity. But the spring is not a proper time for this work, unless at a period before the sap begins to circulate freely.

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## THE CULTURE OF STRAWBERRIES.

The New-York Horticultural Society, at a recent conversational meeting, arrived at the following conclusions in regard to the best method of cultivating strawberries:

"The best soil for the strawberry was stated to be a gravelly loam. The land should be well drained, and to every acre applied twenty bushels of unleached ashes, ten bushels of lime, and two or three pounds of salt. The ground should be well broken up, animal manures should be eschewed; leaf is the best, and this should be carefully spaded in. About the first of July is the best time to set out the plants. In doing this, pains should be taken to have them firmly rooted. The roots should be eighteen inches apart, and the plants a foot apart.

Sometimes it will be well to allow greater interval, in which case the in-

terstices can be filled up from the growth of the runners. After setting out the plants, throw on a covering of tan bark an inch or an inch and a half in depth, then water them plentifully and the moisture will be retained a long time. After cold weather comes on, cover the strawberry-beds and the walks with clean straw, throwing over a little brush, or something to keep the straw in its place. In the Spring remove the straw and make use of some fertilizing agent to give the plants vigor, as sulphate of soda, sulphate of ammonia, or nitrate of potash. Keep the roots out, see that the plants are bountifully watered, and let nothing intervene to disturb or retard their growth till you gather the fruit. The beds should be made over as often as every three years."

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FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

## THE CULTURE OF FRUIT.

MESSRS. EDITORS :—During the last four years I have examined the fruits in the markets of New-York, Brooklyn, and Williamsburgh, as well as the orchards of their environs, and I have perceived that all the fruits are inferior to those of Europe. This is not on account of the soil, but from neglect of cultivation, and from want of care in the management of fruit trees. It is only in Boston that I have seen in the market, good apples, good pears, and good peaches. I do not know where they grew, but I am satisfied that the State of New-York does not produce them. For the purpose of indicating the proper method of improving this branch of rural industry, I will examine successively the several products of this branch of labor so profitable to the farmer.

### 1. The Strawberry.

There is not to be found in the market any of this fruit except what is produced from the native growth, and without the labor of cultivation. The garden strawberry, though larger and of excellent flavor, is seldom cultivated. There is a peculiar quality to the strawberry which has a taste well pronounced that of the pineapple. This fruit is not produced without pains, but is juicy, refreshing, and delicious.

The town Fontaines des Roses, situated about three miles from Paris, furnishes this fruit to the inhabitants of the capital, and its proprietors are enriched by this kind of industry. They devote themselves exclusively to it, and the surrounding country for twelve miles square produces only this fruit, the value of which in Paris, to the dealers, is from four to six cents a pound. The wild strawberry does not grow in the forests, which are young, cultivated, and held by individual proprietors, and have the appearance of gardens. Nor does that fruit improve much by culture, though the taste becomes a little more delicate. But Poland not only cultivates extensively the garden strawberry, but produces this fruit in the forests so extensively that for one cent, in the market of the small cities, one may buy a gallon, and two persons can pick a barrel in a day.

The fruit is not only eaten with sugar, or with milk, or with sweet wine, but the juice is expressed, and is used to season ices in the summer, and gives them a most agreeable taste, as well as that of the pineapple, which resembles the flavor of this fruit.

The manner of propagating and cultivating the strawberry plant is as follows:

The soil is prepared beforehand, slightly manured, though it is necessary that the manure should be thoroughly beaten or broken up, and at the time of planting, should be perfectly free from weeds. The buds or new shoots which the old plant has put forth are cut off near the root, and are placed in regular lines, in the ground, either in autumn or in spring, at a distance of about six inches. Those planted in autumn will bear fruit in the next season, but those planted in the spring will not produce fruit till the following year. To preserve the strawberries in good condition, it is necessary to keep them entirely free from weeds. In the month of October, cut off the runners with the young buds, and repeat this operation in the spring.

To transport the young plants to America, it is necessary, as soon as they are dug up, to place them in boxes, and cover them with earth, and as soon as they arrive, to plant them in the ground already prepared for them. The experience of the writer proves the correctness of these directions, which are based upon that experience.

Finally, I would add, that the strawberry plant, being properly trimmed, should be carefully stirred with a weeding-hoe through the entire spring, and all the yellow and decaying leaves should be cut off.

## 2. The Gooseberry.

In America there are but few gooseberries, except those which grow spontaneously in the woods, and they are sour, small, and have but little juice; while in Europe they are cultivated with care, and they are very profitable to the producer. The ripe gooseberry is wholesome and refreshing. The syrup of gooseberries is beneficial in febrile diseases. The preserve serves to season the beef and cutlets of convalescents, and the gooseberry tart is good for children.

The gooseberry is white and red. The former is sweeter, and is used chiefly for eating. The latter serves also for syrups and for sweetmeats.

The wild American gooseberry is somewhat improved by cultivation. It must be taken from the forests, and transplanted in the fall into the garden, or on land properly prepared for it. The old and superfluous branches should be cut off. Every spring the earth should be removed around its roots, and which should be covered with manure. The young branches may be cut off and transplanted in suitable places. Thus cared for, it will reward the laborer with a plentiful crop. It grows well among vines, with which, in France, it is often cultivated.

I propose to indicate the manner of making the syrup and sweetmeats from gooseberries. When they are ripe and gathered, the juice should be expressed by pressure, and suffered to stand for twenty-four hours in a cool place, so as to prevent fermentation. It is then poured into a copper kettle. For every quart of juice add half a pound of sugar for the syrup, and a pound for sweetmeats. Place the mixture over a moderate fire; stir and skim it till it is clear. Pour the syrup into vessels to cool, and then bottle it. The sweetmeats should be put into china pots and cooled, and covered with white paper saturated with brandy, and then with prepared bladder.

To give the preserve a pleasant flavor and odor, some add a pound of whortle-berries to three pounds of gooseberries, and press out the mixed juice. The sweetmeats should be boiled a longer time than the syrup; they should be boiled and re-boiled until on cooling they are sufficiently thick to be cut

with a knife. It is well to renew the paper over the preserves once in two or three months.

In France, sweetmeats are prepared for commerce with brown sugar and even with molasses; but they do not keep so well as those prepared otherwise, and I should always recommend refined sugar. A quart of syrup costs twenty cents; the preserve, with refined sugar one shilling a pound, and with molasses ten cents.

Confections of the gooseberry serve also for fine pastry, and the syrup for ices. I say nothing of the gooseberry of Manot, as it is of little value.

### 3. The Cherry.

The cherry-tree comes to us from the East, from Persia. The Crimea produces many fine varieties, and from this region it was introduced into Poland and the low countries of Germany, where it ornaments the public roads.

The cherries of the New-York market are of poor quality, without proper flavor, deficient in pulp and in juice, while the coat is thick with a hard skin, where they grow wild in the forests or fields, unless improved by very careful cultivation, judicious pruning, and scraping the bark. Under such treatment of the tree, the fruit will improve.

A pound of bad cherries in New-York costs ten cents; while in Germany, for that sum perhaps fifty pounds; in Poland still more; and in France ten, and of good quality.

There are different qualities of cherries: 1st. White, of an exquisite taste, a mixture of sweet and sour, a single one of which weighs half an ounce. It is called noble, and is found in Europe, in the Crimea, and in Poland. 2d. The common white, a smaller variety, a pleasant taste, but a little sour. 3d. Of blood color; small, but sweet. 4th. Black, of sweet taste, and with a thin skin. 5th. The hard cherry, with a large and hard stone; flesh dry, and taste sour, bordering on the bitter.

The first of these is served on the tables of the rich. The second is common, and is not only eaten, but is also mixed with the third and fourth kinds for sweetmeats. They are also dried for use in winter. The last kind are not esteemed, but are given to children. All the others abound with an agreeable and refreshing juice, and syrups and sweetmeats are made of them in the same manner as from the gooseberry.

To obtain good cherries in the State of New-York, it is necessary when the trees are in the right condition, to gather the fruit, cutting off the stems, and confine them in a cask. As soon as they are received, the ground being well prepared and manured, separate the pulp from the stones; bury these in the earth, about eight inches apart. In a year or two, when the young trees are vigorous, transplant them in the autumn to the place designed for them. Throw barn-yard manure round their roots. The manure may be mixed with blood from the slaughter-house, and in the third year the young trees will bear fruit. But constant care should be taken of them.

The peach-trees of New-York might be improved by grafts from Germany and France, when the buds are partially developed in the spring. The communication by steam and railroad is now very rapid. I commend this to the intelligence of the farmers and of amateur fruit-growers. I repeat that in Germany all the public roads are set with these trees, and thus the crop produced is very large, and their income covers the cost of keeping the roads in order.

If one would make a syrup of cherries, the process is as follows: As soon

as the cherries are ripe, gather them and leave them in a heap for forty-eight hours in a moderate temperature. Then press the cherries and strain the juice. Boil the juice as directed for gooseberries, without sugar. When it is cleared of skum, add sugar to your taste, and boil it a second time with the sugar, and again skim till it is clear. Then add cinnamon or cloves to your taste. Let the syrup cool, place it away in glass vessels, and cover them as in the case of gooseberries. If the syrup begins to mould after a time, re-boil it and add more sugar.

If sweetmeats are to be prepared of cherries, the pulp must first be separated from the stones, and the juice boiled with the sugar for half an hour. Honey may be substituted for sugar, but the taste will be injured, and the peculiar effect of the honey must be overcome by the use of spice, the spice always being used in the form of a powder.

Dried cherries are good in some diseases for convalescents, when boiled, and are prized by children in the winter. Where cherries are very abundant, they are manufactured into spirits called Kirschwasser, the purest and most wholesome liquor of Germany. It is sold extensively in France, England, and the United States.

### 4. The Prune.

But few prune-trees are seen in the United States, and the prunes which are in the market are sour and small, but are still of some value when dried. When cooked, they remove obstructions or are laxative. A few of a better sort are found, but are very dear.

The prune is of several species. Besides those to which we have referred, they are white, chestnut, and blue. There are also others. The small prune, white and a little yellowish, has an excellent taste, is easily separated from the stone, and is used in France for sweetmeats. It is found in the environs of Orleans, of Blois, and on the banks of the Loire. The large white has a bitter taste, brisk, and a little tart, and is used only for eating when fresh. It is found all over Europe.

The Rainglotte has a green color; is large, with an exquisite taste, and is gathered before it is ripe. It is used in France in the manufacture of a liquor called *Chinois*, of which the consumption is very large and the production very profitable.

There is still another excellent kind of white prune, of the size of a duck's egg. It is found in Switzerland and in France, in the environs of Blois. In Poland I have successfully grafted trees from buds brought from Switzerland, though they were two months in the passage.

The chestnut-colored prune is of the same size as the preceding, and is very profitable; but the deep blue is the most valuable. There are two varieties. In one the pulp is easily separated from the stone. When it opens, it has the color of the skin of the chestnut; but in ripening it is covered with a rime, which changes its color into a deep blue. Its flesh is yellow. The German is not so good as that from Poland. It is less fleshy; its stone is large, as may be seen in those which are imported dry into America, and which are called Tzewtchken. The Hungarian is most esteemed. It is delicious, and is made into a liquor called Kivoritsky, or Plumberry. The other kind is oval. The pulp is separated from the stone with difficulty. It is called the prune of Damas, whence it originated. It is more savory, and more juicy, and sweeter than the other variety. It is imported into New-York dry, and is called the Prune of Bordeaux.

But the best kind is in the environs of Chinon, in France, and in the de-

partment of Cher and Loire, and enriches its cultivators by a large and profitable commerce in France and England. The Hungarian is not superior to this.

The prune is a very valuable gift of Providence. As fresh fruit, they are wholesome, and refreshing, and nutritive. Dried, they may be preserved many years. Made into sweetmeats, they keep many years, are useful for children, with their bread, and is employed in puddings, and in making valuable liquor.

Prunes are dried as follows: Lay them upon a flat surface woven with young branches of trees, in the manner of a basket, but less close. Expose them to a moderate heat, as in an oven after bread has been baked, and let them remain till the second day; then turn them, and again expose them as before, till they are completely dried. In Germany they are dried for a full hour, in holes dug in the ground. Some bury them with a fire in the ground, by which means they are made to taste of smoke. Another inconvenience is, that the windfalls, or wormy prunes, are gathered among the good ones, which is scrupulously avoided in France.

Another manner of drying them is as follows: Those prunes which are easily separated from the kernel are selected, the kernel is removed, and each prune is fastened upon a small wooden peg, and thus dried.

Sweetmeats are prepared as follows: The white prunes are stoned and placed in a kettle over a moderate fire. When they boil, add sugar, more or less, according to one's taste, or say four pounds to a bushel or more. When properly thickened and cooled, remove it into pots covered with brandied paper. The blue prune is treated in the same manner, but without sugar, and with cinnamon or cloves. They should boil sixteen hours, and the greatest care must be taken, constantly stirring them with a wooden spoon, until the preparation is entirely finished. The longer this process is continued the longer they will keep.

They who wish the pleasantest sweetmeats should take half of these prunes, and half of those of Damas, and prepare them as those last described. When the juice is clear, and the stones all separated, the juice should be strained. If all can not be prepared at once, pour back the juice into the kettle, and then add more prunes and proceed as before.

To obtain prune-trees, the same method should be observed that we have described when treating of peaches. But the ground selected should be protected from the north wind. The prune likes company, and if planted separate from others, will not succeed so well as when enclosed in an orchard.

### 5. The Apricot.

An apricot is not of great value, but it demands a great deal of care, and should be protected from the north wind. The least frost destroys the flower, and renders the tree barren. They should be arranged in rows against a wall, and exposed to the southern sun.

Apricots, when skinned, stoned, and boiled with sugar and white wine, produce a marmalade, which is good for a dessert, and wholesome for convalescents.

SANIEWSKI FELIX.

[Translated from the French Manuscript by the Editor.]

*To be continued in the next number.*

## PROMOTION OF INVENTIONS—ASSOCIATED INVENTORS.

MEN do that for which they have means. Capitalists buy to sell at an advance and the possession of capital directs their mental faculties to study the most safe and lucrative investments. Whatever genius for literature, art, or science they may possess lies dormant; the mind being drawn by interest to find the way of using most profitably the instrument which is already in possession.

Men without capital, if they believe they have genius, use their mental powers to advance their fortunes. Hence it is that authors, artists, inventors, etc., seldom possess wealth until they have acquired it by their works. The mere possession of capital in early life, or even the expectation of it, diverts and withholds the mind from patient study and labor, without which even the greatest genius can not attain the excellence that faculties not much above mediocrity can attain in communities where good instruction is offered them. And hence it is not to be expected that inventors will individually have means to establish their inventions.

Their resource hitherto has been to seek the coöperation of capitalists. But capitalists, not having studied, are not able to see the capabilities of inventions, until they are in successful operation. Watt in vain, for many years, besieged the doors of capitalists, before Dr. Roebuck, a man of more science than capital, invested an inadequate sum in his enterprise, and suffered loss by it. After more delay, Boulton, a man of sufficient capital and extraordinary business talent, formed a copartnership with him, and expended fifty thousand pounds before one pound was returned. Fulton, for many years, appealed to capitalists, and was derided by them before he got means to place a steamboat upon the Seine, which was deemed a failure, and ten years more elapsed before he made a demonstration that could allay the apprehension of failure. Evans, Trevithisk, and many others, for half a century struggled to introduce the locomotive, and were deemed insane; and they were not more unlucky than most inventors.

This glaring truth, that wealth diverts the mind from science, and that therefore men of wealth are not likely to promote inventions, until they see with their eyes what they can not see with their brains—that they will accomplish the objects intended—this trite and established truth should admonish those who rely upon their intellectual powers, that they ought to unite, and aggregate their small means for the purpose of putting their inventions into operation, so far as to demonstrate their utility, to the satisfaction of capitalists, who certainly desire to promote whatever will yield large profits, and are backward only because they can not by calculation find out the result of a machine not yet built.

Capital governs, with what little science its owners have picked up. The book-seller is boss-author; the shipping merchant is boss-engineer and naval architect, and smiles at "theorists" who decry the tub-like shape of his ships, and the lumbering complication of his engines; and if he believed in improvement, he would not desire it until his present ships are worn out. And men of science, disregarding each other, bow to these blind idols. Will this continue much longer? Is it not yet possible to organize a company of inventors, and of such liberal capitalists as may be disposed to promote inventions?

The reply to these questions is stereotyped: "Inventors can't agree!" This reply is not true. Inventors can agree as well as traders, or manufacturers, or politicians.

We now propose to outline a plan, which others may amend, for a Company of Inventors and Capitalists. And this we do, not with the intention of doing more than naturally should be done by journalists who have peculiar facilities for aiding in the first steps of such a movement. What we intend is to collect the names, subscriptions, and opinions of those who are willing to join in such an effort, if it can be commenced with sufficient means. We therefore invite all who are so disposed to communicate with us by letter or personally. If we find the prospect encouraging, we shall willingly make our pages a medium of communication, without charge, until a company has become able to do without such help.

*The Rooms* are a burdensome expense to a new organization. But there are two institutes already established, and another building, which will allow the use of their rooms for such an object. The American Institute, the Mechanics' Institute, and the Cooper Institute intend to promote such objects to the best of their ability. There is therefore no occasion to apprehend an absorption of the means in the mere expenses of the organization. On this point we speak advisedly.

*A Fund* is indispensable. This fund should be devoted to the practical demonstrations necessary to convince the public of the utility of inventions. Half the profits of it should remain in it, to increase it. The stockholders should vote per share, as in other companies.

Inventors would offer their plans and conditions. Each stockholder would be at liberty to appropriate his stock to any plan which he preferred. But if any stock should not be thus appropriated, the directors should appropriate it.

The company should receive a portion of the profits; but such receipts should be credited to those whose stock was invested in that particular invention.

We will illustrate our meaning by an example. Fulton brings in a drawing of a steamboat, with descriptions, calculations, etc., and such proof of its utility as he can adduce. He argues his case with the members individually, and with the directors. He persuades them to appropriate ten thousand dollars. But he wants twenty thousand. Evans brings in his plan of a locomotive, and in the same way he gets a subscription; and others do the same. But neither gets the amount he requires. Fulton proposes to the others to take their funds, with the consent of their subscribers, on condition that out of the first fruits of his invention he will put four times as much into theirs. They may deem this proposition preferable to waiting for more subscriptions; if so, they will become stockholders in Fulton's enterprise, and aid in establishing his invention; and he, if he obtain means, will in like manner aid them.

Another example: Gurney proposes his plan of a steam-carriage, and invites others to improve upon it, and to contribute means to build it, on condition that, when it has become profitable, the directors shall appraise the contributions of each who has in any way promoted the general result, and shall divide the stock of the invention among them, in proportion to the value of what each has contributed. Hancock offers to construct a boiler, which Gurney accepts, though he secretly prefers his own. Symington offers a ratchet engine, as a sure means of avoiding the pitching and rocking that a crank and connecting rod will produce: this Gurney politely declines. Smith, the wheelwright, offers a set of wheels, which are accepted. Norris will build the engines, and take half pay in stock; and twenty different persons will furnish money enough to do the rest. Gurney's carriage finally is

built, and runs at fifteen to thirty miles an hour. But cautious capitalists say, "Wait! he will run into carriages, frighten horses, and there will be damages to pay. He will break down, blow up, and so forth. No, no! it won't pay! We won't go into it! Wait awhile!"

In this stage it is well to have an association of men who have sufficient science to *know* that these fears of mere ignorance are groundless. Such men will maintain the invention until the bugbears are no longer formidable. When these irrational apprehensions are allayed, and the mere physical eye can see that the invention is profitable, a rush of pirates takes place and Gurney would be robbed and ruined if no force but his own were ready to defend him. But the united sympathy and interest of the members of the company would put the pirates handsomely through the courts; and, as in the case of Watt and Boulton, they would have to pay three times the patent fees. At last the invention has become valuable in the market. The directors form a joint stock, giving to each as many shares as they deem him justly entitled to, after a consideration of the contributions and hazards.

We need not spin out this thread. We will conclude by suggesting a few conditions:

1st. Each member to pay ten dollars per year, and as much more as he pleases; to be credited seven per cent interest for pre-payment, and to forfeit fourteen per cent for delay of payment.

2d. Each member to vote on the amount credited to him on the books.

3d. As soon as a member has $100 in the fund, he may receive half the profits on his share; the other half to be added to his share, besides the annual payment of $10.

4th. Each member may appropriate his share of the funds to such inventions as he prefers—the profit or loss to be his own; but the directors to have control of the funds, so that they shall be returned with the stipulated profit.

5th. Funds not thus appropriated by inventors may be appropriated by the directors, on account of their owners.

6th. The directors, by a nine-tenths vote, may veto an appropriation of a member, if, in their opinion, the invention is unworthy of trial. This is a better guard than to exclude the invention from exhibition, because it is hazardous to say that it may not receive such improvements as will make it worthy of trial.

Such is the general idea, not wholly original, which we have of an organization that shall in time be able to inspire confidence in capitalists, and until that time shall enable inventors to help each other. We have known inventors to work at low wages on their own machines, while their employers made fortunes by them. And if inventors are too indolent to avail themselves of the great principle of association, such will often be their lot. They may fancy that they can contend with wealthy freebooters; but one may as well attempt to beat an army with his fist.

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Sawing Red-Hot Iron.—Iron bars and shaftings are cut to length by a circular soft steel saw. The iron to be cut is heated red hot, and in that condition is presented to the saw, which rotates at high velocity, and is kept cool by causing its lower half to revolve through a trough containing cold water. A large bar of iron can thus be cut through in a few seconds.

## STEAM-CARRIAGE PROJECTS.

Among the numerous steam-carriage plans that were really good, there have been a few so absurd as to have excited prejudice against the invention. Among these are two—one English, and one American—both of which have been practically tried, to the full satisfaction, no doubt, of those who hate all who pretend to know more than their neighbors.

Garvey, in his evidence before a Committee of the Commons, 1834, says: "Mr. King, who is a naval man, associated a steam-carriage with a vessel, and built one with 'two decks;' two tiers of passengers above; and engines in the 'hold,' between the wheels; the weight was ten to fourteen tons. It was drawn into the road; the steam escaped from the pipe into the 'hold;' the engineer jumped off, and the wheel went over his head."

A friend has recently given us a picture and description of "Gen. Semple's Prairie Steam-Car," cut from an "Extra Sun," and credited to the *Scientific American*. The date is not upon the piece of paper.

It begins by saying: "There are few plans of enterprise, now in progress, to which more importance attaches, or which excites more interest, than that of navigating the extensive prairies by steam-power, and with carriages capable of accommodating one hundred passengers, besides twelve to twenty tons of merchandise." It goes on: "Gen. Semple, now in the Senate at Washington, some time during the last summer adopted the very rational conclusion, that the power of steam could be as efficiently applied to the propulsion of large carriages on prairies, as to other purposes; and that whatever load might be drawn by 100 horses, might also be propelled by a 100 horse-power engine." * * "We have no particular instructions from the honorable inventor, with regard to the construction of the upper works; but having the foundation and general plan, we have presented the plan which appears to us the most convenient for the purpose intended."

The wheels are six feet high, and five wide. There are four drivers, which may be turned "by cranks or by gear-wheels attached to the ends of the cylinders; the latter mode will be preferable if a rotary engine is used, in which case the two gear-wheels on each side will be driven by an intermediate wheel, which will take to both at the same time. Either plan is sufficiently simple; and, on the whole, there is no doubt of the complete success of the enterprise."

Taking the wheel as a measure, we find that the car is twenty feet wide, twenty-three high, and forty-seven long. It has a ladder to reach the first story, and stairs to the second. Within two years this oracle has approved another scheme to put a heavy locomotive on a plank roak.

Now, these schemes have in them all the elements of failure, and not one element of success, if the opinions of the English steam-carriage men are correct.

We have been told that General Semple spent $20,000 in an attempt to put this into execution. Whether he was induced by the assurance of the very *Scientific American*, that "on the whole there is no doubt of the complete success of the enterprise," we do not know. But when men of "science" give such assurance, and such machines are built, it is natural that those who witness the failure should have but little confidence in the self-styled men of science. Thus it is that quackery, or perhaps puffery for pay, destroys all confidence; and the press can aid inventions only so far as it finds men

qualified to reason upon them—that is, only so far as it is read by theoretical or practical mechanics.

Twenty-six years ago, the word "locomotive" was not applied to the engines on railways; they were called steam-carriages. Steam-carriages, then, have succeeded on iron roads, and that so perfectly that there can be little doubt of their success on roads of a somewhat inferior quality.

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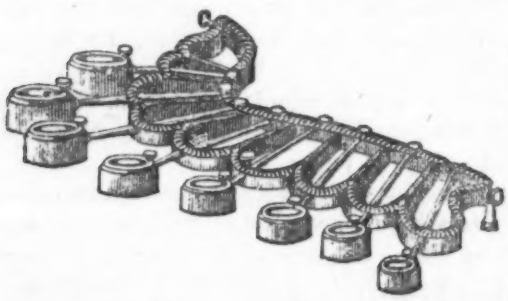
## DOLCE CAMPANA ATTACHMENT TO BOARDMAN, GRAY & CO.'S PIANOS.



This improvement of the pianoforte is claimed to be one of the greatest made for a long time; and from what we have seen, and from the descriptions we have had of it, we should think this claim well founded, although we have had but a very limited opportunity of testing it for ourselves. The following is given as the best illustration of it, in connection with the small engraving which accompanies it.

The crooked bridge of a piano is connected with, and, as it were, part of, the sounding-board; and the strings, passing over this bridge, and connected thereto, when put in motion give vibration to the sounding-board, and thus power and volume of tone to the piano.

The Dolce Campana Attachment consists of a series of weights, held in position in a frame, and is so placed and secured in the piano, that these weights are held over this crooked bridge; immediately under them there are screws inserted in the bridge for the weights to rest upon when the attachment is in use, and the pedal is so connected with the attachment that when pressed down, the weights (attachment) drop so as to rest on the screws, and thus on the sounding-board; and when the foot is off the pedal, and the pedal lifted up, the Attachment rises off the sounding-board, and has no effect; but when the pedal is pressed down, the weights, or attachment, rest on the sounding-board, controlling its vibrations, and the tone and power of the instrument; and the attachment thus being under the control of the pianist, he can produce the most beautiful effects at will. When the attachment is in use, it produces a delicate, soft, bell-like, silvery tone in the piano, truly enchanting; and when we take into consideration that the great power of tone of the piano is in the free and perfect vibration of the sounding-board, and that the sounding-board's vibration and tone are under the perfect control of the performer, so that he can let it sound full or graduate its tones to the music and effects wished for, it will at once be clear that the invention is a valuable one. By using it in connection with the harp, or soft and loud pedals, a great variety of effects and changes can be produced, like changing the stops of an organ; and by holding the loud pedal down, and striking full chords with the fingers, and then letting the attachment off the bridge, a full and perfect swell is produced at the will of the performer. The Dolce Campana Attachment is truly a legitimate and valuable improvement, the most

valuable one of modern times, to the piano-forte. Messrs. Boardman, Gray & Co., of Albany, N.Y., are the inventors and patentees. It is applied only to their otherwise truly superior piano-forte. They have lately patented another valuable improvement, which consists in making the sounding-board of their pianos corrugated, so that each side is fluted, thus gaining a much greater surface, and securing firmness and stiffness without the necessity of cross-bracing, as in the ordinary sounding-board. This, and its peculiar form, secures it from a liability to crack or split, and it has been found on trial to give a much greater volume of tone, and the quality also is much improved.

We take pleasure in calling attention to the advertisement of Messrs. Boardman, Gray & Co.

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FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

## SAVE YOUR SUDS.

"A PENNY saved is as good as a penny earned." In the form of soap-suds, there runs from the kitchen fertilizing matter enough to supply the family with garden vegetables. How can it be saved and applied? Let me suggest. As often as washing day comes, let all the suds be carefully saved, in a tub or receptacle kept expressly for that purpose. After sunset, let it be applied to whatever in the garden needs it most. Cucumbers, squashes, and melons need frequent applications of it while small, and it will do them as much good as guano or superphosphate; having this advantage—it costs nothing, and is always at hand. Tomatoes, cabbages, beans, peas, corn, and potatoes, and even weeds, will all be grateful for small favors of this kind.

Your grape vines should occasionally have a pailful; the oftener and the stronger the better. By the way, vines need frequently looking after at this season. Useless shoots and suckers should be lopped off. Direction should be given to new branches; ties should be examined and secured when necessary, and the ground should be kept loose about the roots, and free from weeds and grass. The removal of leaves for the admission of light to the fruit, I have no faith in. Let them have the covering which Nature designed, and they will mature and ripen in due time. You need not fear making the ground too rich; the grape is a voracious feeder.

But I am not done with suds. Every garden has, or should have, young fruit-trees. To these application should be made of strong suds frequently. It will destroy insects, remove moss and scurf, promote the health and vigor of the bark and the growth of the tree.

But this is not all. There should be a cess-pool, to which all the wash of the kitchen and other parts of the house should be conducted. Into this let there be *dumped* loam, muck, leaves, weeds, bones, old shoes, ashes, old plaster, and what not. If properly cared for, it will be found, at planting time, to contain sufficient for a liberal dressing for the whole garden, and that, too, of the very best of vegetable aliment.

Try it, reader, and save yourself the trouble and expense of running about, in the spring, after manure for your garden. R. B. H.

## RINGBONE OCCURRING IN HORSES.

RINGBONE is another form of exostotic disease, the pathology or nature of which, not differing materially from those already considered—spavin and splint. Its location is the pastern-bone. Most generally, the joint is involved, so that the final result is *anchylosis* (loss of motion) in the joint formed by the *os suffraginis* and *os coronæ*, (large and small pastern bones.)

*Nature of Ringbone.*—The term *ringbone* is far behind the times as regards our present knowledge of *nosology*, (which signifies the doctrine of the names of diseases;) yet to the unprofessional it is somewhat suggestive, and therefore may as well be retained. It signifies a circular eminence around the pastern-bone. The ring is formed by incrustation, or *osseous* deposit around the bone, or joint, as the case may be; yet, in order to make out a case that comes strictly within the meaning of the word—that is, as horsemen interpret it—there must exist complete *anchylosis* of the pastern-joint.

Various osseous deposits are now and then thrown out on the pastern and coronet-bones, varying in shape, size, and seat; they are often unaccompanied by lameness, and, consequently, stable-men have named them "*cling-fasts*," or something of the sort. They all, however, come under the disease known as *exostosis*.

A pure case of ringbone—*anchylosis*—generally has an external origin: we find that an osseous deposit commences at the lower margin of the pastern, and upper part of the coronet-bones; this spreads so as to involve both joint and ligamentary tissue; and if there be any predisposition, in the animal, to *ossific* diseases, the malady may spread, so as to involve fetlock, pastern, and coffin joints.

*Causes of Ringbone.*—This disease, in many cases, is hereditary, transmitted, either directly or indirectly, through the sexual congress. I shall not contend that its *direct* origin is a settled point, but merely intimate, in support of this opinion, that I have seen colts of only a few weeks' growth the subjects of this disease. I once bought an unweaned colt, and brought it up by hand, as the saying is. At the age of four months, I observed tumefaction on the pastern of both hind-legs, which ultimately resulted in stiff joint. The little creature had never been subjected to any sort of labor or exercise to produce lameness, and therefore the disease must have originated at birth. Mr. Percival, whose opinion on veterinary matters is unquestioned, says that his attention to the *hereditary origin* of ringbone, was first aroused from a remark made by an extensive dealer in horses, in reply to a question put to him, how it happened, that but few ringbones were met with, compared to the number that attracted notice in times past. The reply was: "Because no breeder of horses, now-a-days, will send a mare to a horse having ringbones"—a very good example for American horsemen to imitate; for a vast number of our best, as well as inferior horses, are the subjects of this infirmity.

Of the *indirect* transmissibility of this disease we have ample proof. It lurks in breed just as scrofula and consumption do in the human subject.

The author just quoted remarks that "a coarse or half-bred, fleshy or bony-legged horse, with short and upright pasterns, is the ordinary subject of this disease; and there exist satisfactory reasons why we should expect him to be so. The pastern and coffin-bones constitute the nethermost parts

—the pedestals—of the columns of bones composing the limbs, and being so, they receive the entire weight and force transmitted from above. The pastern, being long and oblique in position, receives the superincumbent weight in such an indirect line that, bending towards the ground with the fetlock, nothing like jar or concussion follows. The very reverse of this, however, happens every time the foot of a limb, having a short upright pastern, comes to the ground. In such, instead of the weight descending obliquely upon the *sessamoids*, (two small bones at the posterior and inferior part of the fetlock joint,) and the fetlock bending therewith, it descends directly, or nearly so, upon the pastern, making this bone entirely dependent on the bone beneath it—the coronet—for counteracting concussion; and should any thing occur to diminish this, or to throw more weight on the bones beneath than they can counteract, jar of the whole apparatus ensues; and an effort of nature to strengthen the parts, by investing them with *callus* and ossification, is likely to be the ultimate result. For we would view ringbone, disease though it must assuredly be called, as frequently, in young horses, a recourse of nature to strengthen weak parts—the bones being unequal to the exertions or efforts required of them."

From the fact that horses of the above peculiar conformation are most subject to this malady; and knowing, as we do, that defects and faults *acquired* become *permanent* in the race, all doubts as to *indirect* hereditary origin are set at rest.

The *direct* causes of ringbone (and at times they are merely *exciting*) are ligamentary strains, brought about by over-work, extraordinary efforts of speed, *pulling up* suddenly, etc. In short, either *sprain*, *injury*, *blow*, or *bruise*, likely to produce inflammatory action in the region of the pastern-joint, may result in ringbone. Still, I contend that, aside from such causes, there must be lurking in the system of the subject a predisposition, denominated by human practitioners *idiosyncrasy*—a weakness in *bone*, *limb*, or *ligament*—the result of errors in breeding, aggravated by a too early use of the muscular powers, and want of proper attention to food and stable management.

It appears, therefore, that there is no *direct* or *specific* cause for ringbone, and we can only regard as *indirect* those causes which, in a large majority of cases, are invariably present.

*Treatment of Ringbone—Preliminary Remarks.*—It would be very interesting and funny to notice some of the methods of treating ringbone; but the subject of this malady is a creature, whose mental and instinctive capacities combined far surpass those of any other animal, and, indeed, do not differ in kind from the mental nature of our species; in degree, however, there is evidently some difference.

He has also nerves to feel, is keenly sensible to pain; and therefore such atrocities as we frequently see perpetrated upon this noble animal, even under the sanction of long usage, are neither interesting nor pleasant matters for contemplation.

There is a common error abroad, and in some of the popular works on farriery the error is stereotyped, that "*ringbone is fed by a bladder at the posterior part of the pastern*," which has just about as much to do with the disease as I had with the late victory achieved by the "Know-Nothings." This error, however, would not amount to much, only that it has led to the infliction of a cruel operation, without the least advantage. In short, it tends to make matters worse than they were before; for this bladder is in reality a *bursal sac*, the use of which is to secrete and contain a fluid called

*synovia*, (known as joint-oil,) used for the purpose of lubricating tendons and their articulating surfaces, so as to prevent friction; therefore its extraction must be disadvantageous to the limb.

It is not enough, forsooth, for the poor brute to suffer this excruciating torment, which usually attends inflammation and ossification of the parts; but he must, in addition, submit to a species of cruelty unheard of in the annals of human medicine, and for which *veterinary science* furnishes no authority. It has been my painful duty occasionally to take in charge subjects that have been most shamefully maltreated in this respect, and I have seen others that have been the subjects of cruelties that would make a Christian shudder to think of, (see "Modern Horse Doctor," p. 278;) and I do hope that the reader, if he be in any way interested in horses, will set his face against every species of barbarity practised on them, and endeavor to aid those who are now engaged in the work of reform. I feel assured that if the American people were better informed as to the nature and treatment of diseases occurring among live stock, these evils would cease to exist. But a new era is dawning. America will, ere long, boast of her veterinary schools, and from them shall go forth a class of the right kind of men, to illuminate the comparative darkness that now exists.

Now as regards the *treatment*. The idea of *curing* ringbone is really absurd—nature never intended that it should be cured. The new growths, if I may so call them, and the changes that take place in the joint, are a part of nature's own handiwork, in view of strengthening a weak bone or joint; and therefore there is no need of cure. To attempt a cure can be regarded in no other light than forcing nature to turn a somerset! Our object in the treatment is merely to aid nature, (that is all the assistance she requires of us.) All we have to do is to excuse the animal from work, and apply remedies that are calculated to relieve pain and lessen lameness. We treat the disease, when first discovered, just as we should a recent spavin or splent, by cooling lotions, cold-water bandages, etc. If the parts are inactive, we apply the usual counter-irritants. In all cases, therefore, of ringbone, whether it have a pereosteal, bony, cartilaginous, fibrous, or synovial origin, rest, light diet, and the above means are most calculated to promote *anchylosis* of the joint, which is nature's cure.

As regards the bony tumor, that is generally nothing more than an *eyesore*, and very seldom causes pain, (that is, after the new formations are completed.) There is some stiffness ever after to be observed, but that is not due to the tumor, but is the natural consequence of stiff joint.—*Written for the Ohio Farmer, by G. H. Dadd, Veterinary Surgeon, Boston, Mass.*

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Gas for Fuel.—The Albany *Atlas* says that a mechanic is manufacturing furnaces for heating dwelling-houses, gas being used as a fuel. A room 15 feet square can be heated, it is said, at a cost of about one cent and a half an hour.

This is just what Mr. Shaw, of Boston, has been doing successfully for several months.

## STATE FAIRS FOR 1855.

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|---|---|---|---|
| Vermont, - - | Rutland, - | September 11 to 13. |
| New-Hampshire, - | - | September 12 to 14. |
| Canada-East, - - | Sherbrooke, - | September 11 to 14. |
| Ohio, - - - | Columbus, - | September 18 to 21. |
| New-York, - - | Elmira, - | October 2 to 5. |
| Connecticut, - - | Hartford, - | October 9 to 11. |
| Maryland, - - | Baltimore, - | October 30. |
| Canada-West, - - | Coburg, - | October 9 to 12. |
| Indiana, - - - | Inianapolis, - | October 17 to 19. |
| Illinois, - - - | Chicago, - | |
| New-Jersey, - - | Camden, - | |
| Kentucky, - - | Paris, - - | September 25 to 28. |
| North-Carolina, - | Raleigh, - | October 16 to 18. |
| Pennsylvania, - | Philadelphia, - | |
| Georgia, - - | Atalanta, - | September 10. |
| Virginia, - - | Richmond, - | |

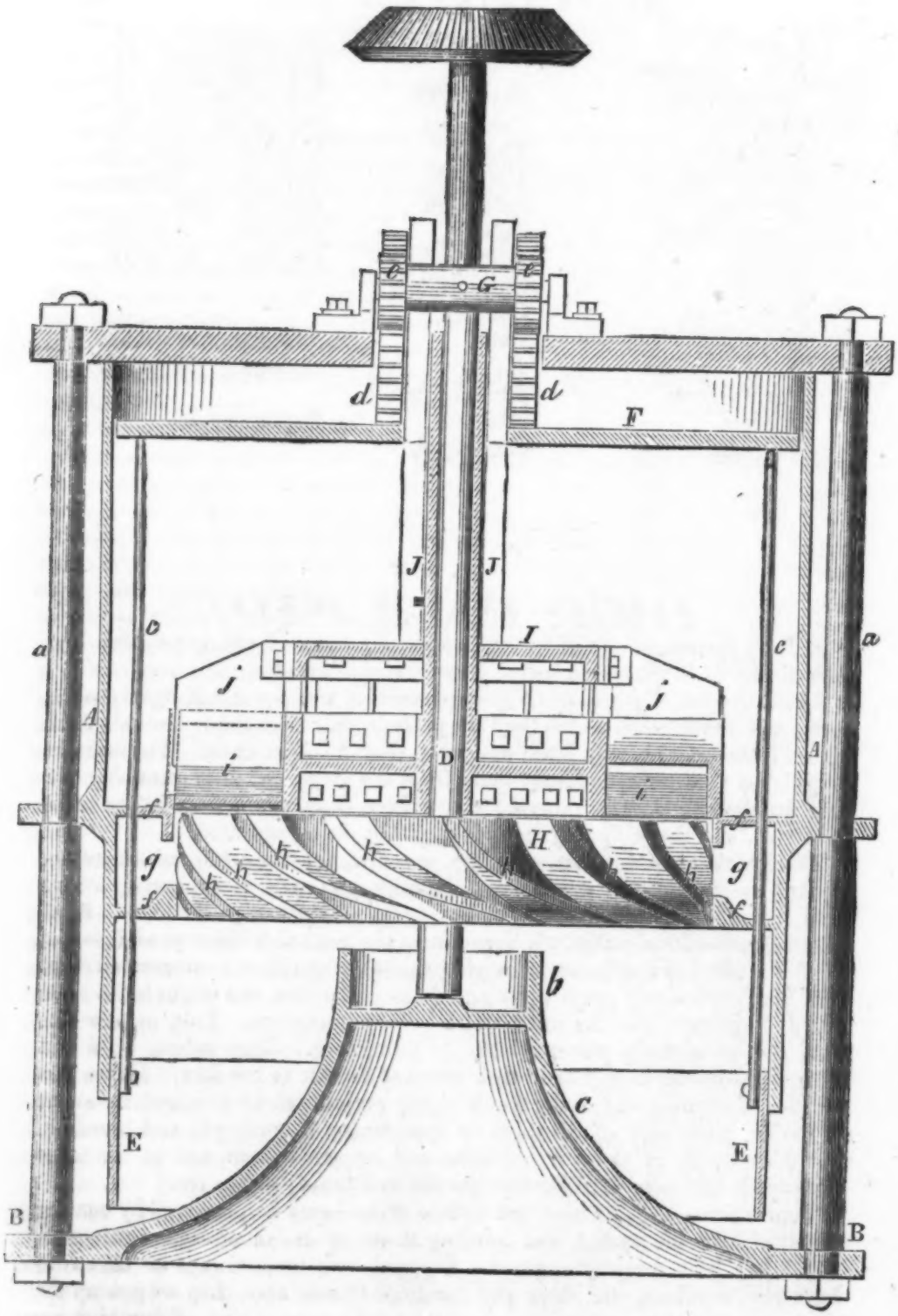
## KEEPING FURS IN SUMMER.

A TROY furrier, in one of our exchanges, the name of which we have lost, thus directs as to the treatment of these valuable articles.

About the 1st of April, or on the approach of warm weather, lightly whip, comb, and brush your furs till they are perfectly free from dust; sprinkle them with a little spirits of any kind, and wrap them in clean linen. Put them in a tight box or drawer, and keep them from the air as much as possible. In this situation they may remain ten or fifteen days, when they ought to be examined, and the whipping, combing, and brushing repeated.

The insects most destructive to furs, are, first, the black bug which infests smoked meats, etc. It appears and deposits eggs early in the spring. This kind of moth does not eat the fur, but preys altogether on the skin. Next the small ash-colored miller, which produces the moth that destroys all kinds of woollen stuffs, and may be seen hovering about the candle on a summer evening. This kind particularly preys upon and destroys the furs, and ought to be most guarded against; also the mite, which is very numerous. They appear like dust, and are scarcely perceptible to the naked eye. They subsist upon and destroy the fibrous membrane which attaches the fur to the skin. Hence the practice of sunning and airing furs is highly prejudicial, for as insects fly about in the air, it not only affords them an opportunity of getting in and breeding, but the warmth of the sun nourishes and supports them, and at the same time spoils the color and destroys the life and beauty of the fur.

Coarse furs—such as bear and buffalo skins—may be preserved by beating them well in the spring, and heading them up in an air-tight spirit-cask, which has been recently emptied. Especial care must always be taken to have furs, woollens, etc., clean and free from insects when they are put up for the season—and no means are adequate to the preservation of furs that are badly dressed and not cleansed of the natural grease.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## VAN DEWATER'S TURBINE WATER WHEEL.

THE accompanying engraving is a vertical section of the water wheel of Henry Van Dewater, of the city of Albany, N. Y., embracing an improvement on his patent of October 1853,-for which he has taken measures to secure a patent.

The improvement consists, first, in the employment of a concave guide at the lower part of the casing underneath the wheel, in combination with a gate which surrounds it, to regulate the discharge of water from the casing or wheel. Second, in the employment of a peculiar gate and a series of shutes made and arranged to admit the requisite quantity of water to the wheel. Third, in surrounding the wheel with a chamber (filled with water) which, in connection with the peculiar form of the buckets, makes the water exert an upward pressure to relieve the bearing step of the weight of the wheel.

A is the cylindrical casing of the wheel, which may be made of cast-iron. It is secured in its upright position by the rods, *a a*, to a flanch, B, underneath the casing. This flanch is placed at the lower part of the guide or deflector, C, which is of a concave conical form, and projects upwards a suitable distance within the casing, A. On the upper end of this guide is the step or bearing of the wheel shaft. This step is secured by an upright ledge, *b*. Within the lower part of the casing there is a rim or band, E, which forms a gate. This gate works snugly within the casing, and has four vertical rods, *c c*, (two shown,) attached to it at opposite points. The upper ends of these rods are connected to cross bars, F, to which vertical racks, *d d*, are attached; these gear with the pinions, *e e*, at the end of a drum, G. Within the casing, A, and directly above the guide, C, is the wheel, H. It is fitted between lateral flanches, *f f*, which thus form a chamber or recess, *g*, around the wheel. The top and bottom edges of the buckets are radial with the wheel, and the intermediate points are gradually curved, so as to leave the spaces between the upper edges of the buckets wider than the spaces between the lower ends; the figure shows the form of the buckets. Directly above the wheel there is a fixed series of shutes or guides, *i*, which are placed directly over the buckets, *h*. The shutes are of a spiral form conforming to that of the buckets, and at the mouth of each there is a slide, *j*, connected to a circular rim, I, which encompasses the shaft, D. These slides, *j*, form the gate above the wheel. J J are two vertical racks attached to the upper surface of the rim, I. Two pinions in a drum (not shown) gear into these racks. By turning the drum, these pinions operate the racks, J J, and thus raise or lower the slides, *j*, according to the direction the drum is turned. By turning the drum, G, the pinions, *e e*, take into the racks, *d d*, and elevate or lower the lower gate, E. The water from the flume flows into the upper part of the casing, and the slides, *j*, being open, it passes in and fills the entire casing, and is directed tangentially against the buckets of the wheel, the quantity being regulated by the guides and slides. As the spaces between the lower edges of the buckets are narrower than those between the upper ones, the water presses upward to a certain degree against the under surfaces of the buckets, and thus relieves the under step of the shaft, D, from top weight, thereby decreasing the friction. The surrounding water in the recess, *g*, acts upon the wheel when at work. By regulating the gate, E, the unequal draft of partial vacuum upon the column of water descending from

the bottom of the wheel is obviated. It will be observed that when the gate, E, is raised or lowered, there will be an equal space all around the deflecting guide, C, so that the draft is equalized at all points around the wheel. In the ordinary French turbine a valve is used for this purpose, but this causes unequal draft, and is therefore inferior to the guide, C.

These improvements on the Jonval French turbine wheel by Mr. Van Dewater are obvious. His wheels have a high reputation for efficiency. Persons in various parts of our country using his wheels, testify to their high per centage of power and excellent construction.

More information may be obtained by letter addressed to Mr. Van Dewater.

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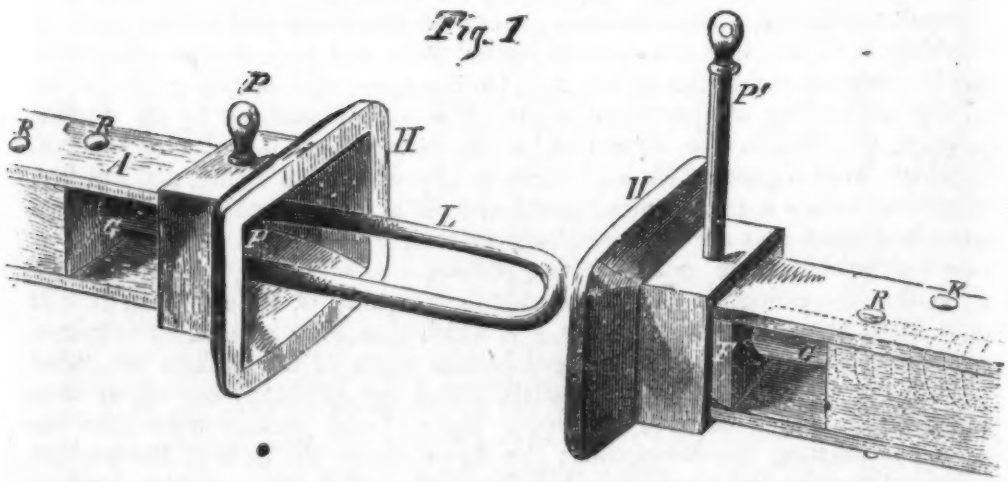
## SELF-ACTING CAR-COUPLING.

Fig. 1




The annexed engravings represent an improvement in railroad car couplings, for which a patent was granted to D. A. Hopkins, of Elmira, N. Y., on the 1st of August, last year.

Fig. 1 is a perspective view, showing two coupling-boxes detached, and fig. 2 is a vertical longitudinal section through the centre of one coupling-box, and showing the coupling link in various positions; also a coupling-pin locked in the link and out of the link. Similar letters refer to like parts.

The top and bottom bars or plates, A A, of each box are made of wrought iron, with their outer ends somewhat enlarged. The bars are riveted together by bolts, R R, and have a wooden block, B, between them. The draw-head, H, is made of cast iron, cast on the enlarged ends of the bars, A A, as shown in fig. 2, thus forming a draw-head strongly united to the wrought-iron bars. The mouth of each head, H, is wide, while the throat, at *h h*, is very narrow. L is the connecting or coupling link. C (G in fig. 1) is a bolt passing into an opening in the wooden block, B; its inner end abuts against a coiled spring, S. F is the head of this spring bolt; it is allowed room in the open space to move back and forth. Its face is fluted with section grooves, to receive the end of the link L, and retain it in various positions, as shown in

Fig. 2

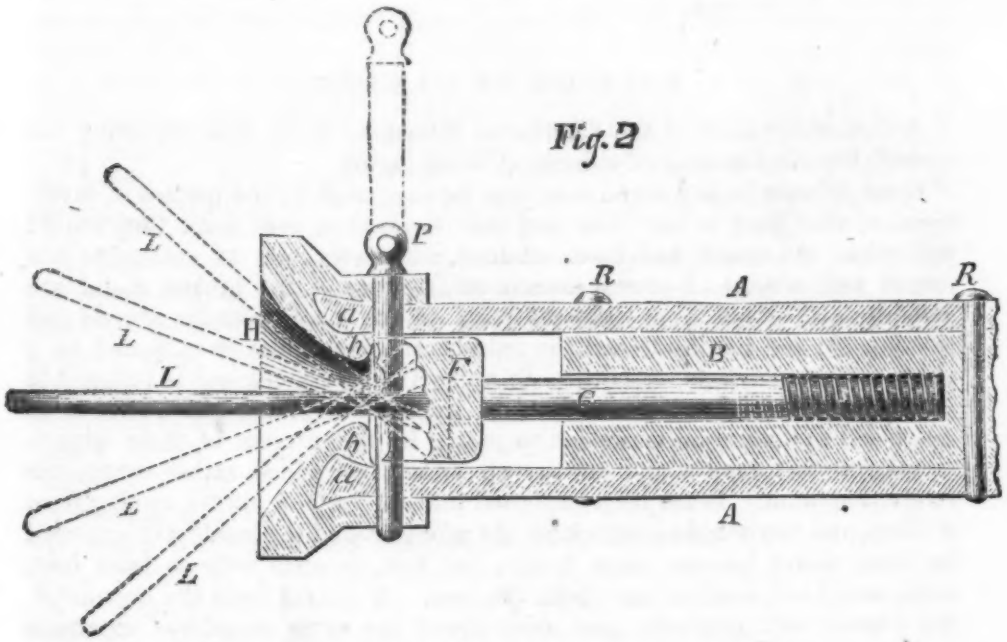



fig. 2. P is the coupling-pin. It will be observed that when the pin, P, is withdrawn, and the cars uncoupled, the spring bolt, C, will be forced forward in the box, and the pin, P, will then rest on its top as shown by the dotted lines, fig. 2, which represent the bolt and pin in this position. When it is desired to couple the two cars—by running back the front or bringing forward the rear one—the link, L, will enter the throat of the box, and push back the serrated head, F, of the spring bolt in the open space of the box, when the pin, P, will drop through the opening of the link, and thus couple the cars. Owing to the narrow throat of the head, H, and the form of the face of F, this self-acting coupling is perfectly adapted for cars of all heights, as shown by the various positions of the link, L, in dotted lines, fig. 2. This must be a very durable and strong draw-head, as the crushing force comes on the cast-iron head, H, while the tensile strain is sustained by the wrought-iron bars, A A, because the pin, P, passes through them as well as the shoulder flange of the head, H. The mouth of the head, H, is so formed as to resist sudden and great shocks.

This self-acting car-coupling has been in use for more than a year on the Canandaigua & Elmira Railroad, N. Y., and has been found perfectly practical, superior to, and more economical than the ordinary kind. It has also been adopted by the New-York & Erie Railroad, whose superintendent regards it as the only coupling yet brought before him well adapted for all the varying conditions and circumstances of railroads.

More information may be obtained by letter addressed to Mr. Hopkins, at at Messrs. Fowlers & Wells, No. 308 Broadway, this city: or W. P. Yates, Elmira, N. Y.

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Trap Rock Manufactures.—J. T. Chance, of Birmingham, England, has taken out a patent for fusing trap rock, and submitting it to severe pressure, while in that state, so as to make it into slabs, and other forms.

## TESTING OF CANNON.

A CORRESPONDENT of the *Charleston Standard* writes thus respecting the manufacture and testing of cannon at Washington:

Guns are cast in any shape that may be suggested by the process of investigation, then fired to test their projectile force, then fired until they burst; and when the result has been attained, with every care to determine the causes and conditions of the experiment, sections of the broken metal are carefully drilled out from different parts of the piece, from the muzzle and the breech, and the inside and the outside, and each piece is subjected to a strain to test its tensile strength. To apply this strain, one end is fastened to a frame, and the other is taken hold of by machinery, and the power is so magnified that the iron is obliged to part. In the process of these experiments, one fact has become pretty well established which rather contradicts received opinion. It has been supposed that the cannon always cooling from without, and the outside contracting, therefore, around the inside still extended by heat, would become more brittle, but this, in such tests as have been used, would not seem to have been the case. A bar cut from the outside of the cannon will generally part with about the same amount of extension as a bar cut from the inside, whether it be taken from a longitudinal or vertical section of the gun. Another fact of some importance, however, has been established. It is found that the strength of the gun may be much increased by taking the weight of metal from the muzzle and casting it around the breech. A gun, for instance, has been cast with a view to this experiment, which was much thinner at the muzzle than cannons usually are, but which was by so much the thicker at the breech, where the charge explodes. It was fired some 1200 times, under every conceivable condition likely to insure explosion, and when it did burst, the fracture occurred at the breech, as is usually the case with cannons.

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## ENGLISH PATENTS.

SMOKELESS FURNACE.—We have during the week inspected an entirely new arrangement of steam-boiler furnace in action on a twenty-five horse power boiler at the granaries and flour mills of Mr. Edward Gripper, Winchester wharf, Southwark. The principle of construction is that of mechanical motion applied to the bars, but different to any thing yet introduced. Every alternate bar is so connected with a cross-piece at each end as to form one entire movable frame, which is connected by gearing with the motive power. The motion given to it is angular; first, the bars rise very slowly about an inch above the stationary ones; they then move gradually in a lateral direction towards the bridge; again sink in a vertical direction about an inch below the other bars, and then move laterally forward to their original position. What are termed the stationary bars are not fixed as usual, but hung in such a manner as exactly to balance the vibrating frame with the load of fuel which it has to move, thus taking but little power from the engine to keep them in motion. The fuel is fed through a hopper and regulating in-

clined plain, and the whole is self-acting, requiring but little attention from the stoker. We were informed that this apparatus had been in constant use about six months, that no difficulties whatever arose from the mechanical motion; there was an entire absence of clinker, nearly perfect combustion of the fuel was effected, and during our visit not a particle of smoke was visible from the chimney. Mr. Gripper estimates the saving of fuel alone at about 10 per cent, beside numerous other advantages.—*London R. R. Journal.*

Water-power Engine.—An hydraulic power engine which works by the pressure of a column of water, simplified and originated by Mr. James Sinclair, engineer, Stirling, has for some time been applied in several large printing-offices in Stirling, Dundee, and other towns in Scotland, having the advantage of a high service of water from the hills. The proprietors of the *Scotsman*, published in Edinburgh, have adopted this mode of power, with perfect success. The whole machine weighs 6cwts and occupies a horizontals pace of only 31 by 25 inches, and but 37 inches high. It consists of two oscillating cylinders, working similarly to a high-pressure steam-engine, the water being admitted through the axis on which they vibrate. It works smoothly, is perfectly safe, has great power for its size, and is perfectly manageable; there is no shock or recoil, and no danger of the pipes bursting. The column of water which the company allow, is 150 ft. high, which gives sufficient power to work off 2000 impressions per hour. Wherever a supply of sufficient height can be obtained, these engines are well adapted to a great variety of purposes.

Ornamenting Wood.—Thos. Clayton, of Oldham, England, has obtained a patent for transferring the designs of graining on choice wood, such as mahogany, rosewood, yew, etc., from engraved metallic heated rollers, or flat surfaces, to surfaces of common woods, such as pine, by which process he obtains a close imitation of choice and expensive woods.

Carriage-Shafts.—H. A. Genetreau, of Paris, has obtained a patent in England for the application of whalebone, or of bamboo cane, to the construction of carriage-shafts.

Match Cigars.—W. P. Surgey, of London, has taken out a patent for tipping cigars with an igniting composition which is fired by friction.

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## MISCELLANEOUS.

A Large Knitting Factory.—The village of Cohoes, on the lower falls of the Mohawk, N.Y., is one of the best for manufacturing purposes in our country, and has progressed rapidly within the past ten years. A new factory for the manufacture of knit-fabrics, such as drawers, etc., has recently been set in operation there, which is said to be the largest one of the kind in the world; it is 395 feet long, 75 wide, and six stories high. It is designed to give employment to 600 operatives; the rooms are stated to be well ventilated, commodious, and cheerful. The name of the new factory is "The Mohawk River Mill." The machinery used embraces all of the most recent improvements.—*Scientific American.*

New Light.—The *Cleveland Plaindealer* says: "Last evening we witnessed the result of a series of experiments made by Dr. Taylor, the celebrated clairvoyant physician of this city—the actual production of a brilliant light, and of course an intense heat, by the decomposition of water. The apparatus for producing this astonishing effect is very simple, and has, as he alleges, *been constructed entirely under the spiritual direction.* It is imperfectly made, and yet serves to demonstrate the fact and the principle involved in the process. The light is exceedingly brilliant, equal to the best quality of gas, and superior in color, it being slightly of an orange tint, and producing not the least smoke. A caveat for the discovery has been filed in the Patent Office in Washington, by a gentleman of this city, who compared the apparatus with that of Paine, and the two are entirely unlike. Distinguished chemists who have examined this invention pronounce it a triumph. We do not feel competent to decide any questions that may happen to arise among scientific men; but the result we have actually seen, and verily believe that no deception has been resorted to in producing it."

Minds, when under excitement, however produced, may be directed into some new and useful channel. But the professed paternity of this professed discovery, does not lead us to place much confidence in it.

New Mode of Separating Gold from Quartz.—Professor Benjamin Harding, of this city, has just patented a new process for separating *all* the gold from quartz, without the agency of amalgam, and which also entirely dispenses with the heavy outlay heretofore incurred for massive crushers. It is assumed that by this new process *every particle* of gold can be taken from the quartz. The agency by which this wonderful result is attained, is of such a nature as to be readily understood by scientific men; and the benefits which are likely to flow from the discovery are too obvious to require remark.—*N. Y. Journal of Commerce.*

To Transfer Patterns, Etc.—The *Liverpool Journal* describes the following process for transferring the forms of natural objects or the patterns on ribbons to paper:

"Saturate common writing paper with porter, coffee mixed with sugar and cream, or the solution of achil. Place the object whose form is to be transferred on the prepared paper, and expose them to the action of the sun's rays or those of a common fire.

Various other solutions may be used for the same purpose, as bichromate of potash, yellow chromate of potash, etc. When figured satin ribbons are saturated with such solutions, and exposed to the sun's rays, the raised patterns are given in beautiful relief in a lighter tint of the same color as the ground.

Fine Cherries.—We have been favored with a taste of some beautiful cherries, (seven in number,) large, plump, small stone, and well-flavored, from a young tree belonging to Mr. R. Hayes, of Paterson, N. J. They grew in two bunches, and were its entire crop. When that tree grows larger, we should admire to refresh ourself under its shade.

Umbrellas.—*Calkins & Darrow*, 42 Maiden Lane, have a very large assortment of umbrellas and parasols, and the reputation of their work is not inferior to that of any establishment in the city. Their prices are reasonable.

New Patents.—We have failed to receive some engravings which we expected to publish in this number. Our next issue shall compensate for the limited amount of such articles in this month's number.

## NEW BOOKS.

ST. PETERSBURG; ITS PEOPLE, THEIR CHARACTER AND INSTITUTIONS. By EDWARD JERRMANN. A. S. Barnes & Co., New-York. 1855.

THIS very entertaining volume is translated from the German by Frederick Hardman. The author was long a resident in St. Petersburg, and he gives his personal experiences with all classes from the Czar to the peasant, and describes their condition, socially, politically, and morally. Its views are *pro* rather than *anti*-Russian. Read it by all means.

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PRINCIPLES OF AGRICULTURAL CHEMISTRY WITH SPECIAL REFERENCE TO THE LATE RESEARCHES MADE IN ENGLAND. By JUSTUS VON LIEBIG. John Wiley, New-York. 1855.

DR. LIEBIG sustains his previous reputation in this new work, and brings his extensive observation and experiments to bear with great power on his theory in relation to mineral manures. It is translated by Prof. Gregory.

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WHICH: THE RIGHT OR THE LEFT? New-York: Garrett & Co. 12mo, 536 pages.

THIS book is deservedly commended on all hands. It will be read extensively, and can not fail to do good. It is got up in excellent style.

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THE WAR IN THE EAST

Is the title of a *librette* by Bishop SOUTHGATE, and handsomely executed by Pudney & Russel, New-York, in which much information is given in a small space, in relation to the causes of the present war, and the relative position of all the parties concerned. We have read it with great interest, and commend it to all.

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BLANCHE DEARWOOD: a Tale of Modern Life. Second edition. Bunce & Brother, New-York. 1855. 407 pages.

THIS book is commended by our brethren of the press, universally, and we cheerfully join in with them. A second edition is already issued—an approval of the public mind, rarely given so emphatically as in this instance. It is also handsomely printed and well bound.

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STAR PAPERS; OR, EXPERIENCES OF ART AND NATURE. By HENRY WARD BEECHER. New-York: J. C. Derby. 1855.

THIS is an after-dinner book, written in the shade of trees, etc, and is filled with the off-hand thoughts and sentiments of the author, clothed in all the strength and exuberance of figure and fancy for which he is so distinguished. It is a printed form of the author. There is much in it that will please every intelligent reader, and some that many will disapprove.

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WE had intended to notice some capital books recently issued by J. P. Jewett & Co, Boston, but are obliged to defer them to a future opportunity.

# List of Patents Issued

FROM MAY 1, 1855, TO JUNE 5, 1855.

Philip Bacon, Simsbury, Conn., improved tape fuze.

Geo. W. Brown, Galesburg, Ill., improvement in seed planters.

Alex. C. Blount, Mount Pleasant, Ala., improvement in preparing turpentine for distillation.

Jno. T. Bruen, New-York, improvement in stone and marble saws.

Dexter H. Chamberlain, West-Roxbury, Mass., improvement in lamps for burning fluid.

Robert Crichton, Buchanan, Pa., improvement in machines for making bolts.

Thos. Daugherty, Erie, Pa., improvement in boot crimps.

William Fowler, New-York, for faucet.

D. H. Fox and John Fink, Reading, Pa., improvement on railroad car ventilators.

Benjamin Hardinge, New-York, improvement in apparatus for dissolving silica.

Benjamin Hardinge, New-York, improvement in facing beds for grinding artificial granite, etc.

Simon Ingersoll, Greenwich, Conn., machine for sawing or felling trees.

A. Lempeke, Pleasant Mount, Pa., mode of checking wind mills.

Henry Link, Little Falls, improved propeller.

T. N. Lupton, Winchester, Va., improvement in grain harvesters.

J. H. Manney, Rockford, Ill., improvement in grain and grass harvester.

Henry P. Odiorne, Philadelphia, Pa., improvement in guides for hemming cording.

Wm. Paule, Alexandria, improvement in ventilating railroad cars.

Lyman E. Payne, Yazoo City, improvement in window sashes.

Gilbert Richards, Cunningham, Mass., improvement in spark arresters.

Ezra Ripley, Troy, balance-gate faucet.

A. W. Roberts, Hartford, Conn., nozzle for hose pipes.

M. M. and J. C. Rhodes, Taunton, Mass., machine for leathering tacks.

C. H. Rhode, N. Y., improvement in sash supporter.

Josiah J. Sherman, Albany, improvement in processes for preparing liquids for aiding digestion.

Thos. J. Sloan, New-York, improvement in apparatus for regulating supply of water to steam boilers.

Jno. Stowell, Charlestown, Mass., improvement in fire-arms.

Andrew J. Suffern, Suffern, improved machine for rolling railroad cars,

Eden C. Tavener and Oscar Nesmith, Hamilton, Va., improvement in ploughs.

Grant B. Turner, Cuyahoga Falls, O., improvement in smut machines.

Joel Webster, Brooklyn, improvement in silvering looking-glasses.

Henry Whitney, Jr., Cambridge, Mass., improved inkstand.

Andrew W. Wilson, Piqua, O., shingle machine.

Francis A. Wolff, Ripley, Miss., method of sawing a log by its own weight.

George B. Woodruff and James N. Palmer, New-Haven, Conn., improvement in gas regulators.

Wm. H. Zahn, New-York, assignor to Frederick Renter, same place, improvement in plaiting and twisting cord.

Hendrick V. Duryea, Oswego, assignor to "The Oswego River Starch Company," improvement in apparatus for manufacturing starch.

Thomas Hooker and Wm. D. Beaumont, New-Orleans, assignors to Alfred A. Pray, Nathaniel M. Harris, E. C. Lamoyne, James R. Jennings, George E. Kirk, and Lawrence A. Kirk, all of same place, improvement in artificial fuel,

John Taggart, Roxbury, assignor to himself and Nehemiah Hunt, Boston, Mass., machine for sawing wedges or shingles.

John W. Adams, New-York, improvement in metallic circular plate springs.

David S. Barber, Almond Thompson, and De Algeroy Thompson, Pittsfield, Vt., improvement in sleighs.

Job R. Barry, Philadelphia, improved ventilating and cooling apparatus.

Francis Bowman, Somerville, Mass., improvement in rosin stills.

Henry E. Canfield, New-York, improvement in double-acting spring hinges.

Handel S. Chapin, Glover, Vt., improvement in window sash fixtures.

Chas. T. Hester, New-York, improvement in connecting clamps for the plates of galvanic batteries.

John Chilcott and James Scungeour, Brooklyn, improvement in sewing machines.

Jacob A. Conover, New-York, machine for splitting wood.

Henry W. Dickinson, Hartford, Conn., improvement in cording guide for sewing machines.

George Dixon, Lafayette, Ind., velocitrait lubricator.

Ezra Fahrney, Mount Morris, Ill., improved hommony machine.

Francis P. Hart, Chandlersville, Pa., gauge for slitting lumber.

Lorton Holliday, Rogersville, N. Y., mitre and beveling machine

W. H. Howard, Philadelphia, improvement in condensers for fibrous materials.

Thos. J. Knapp, Philadelphia, adjustable tenon ing tool.

David Mathew, Philadelphia, improvement in spark arresters.

Purches Miles, Hartford, improvement in curtain fixtures.

A. H. Morrel, Marlin, Texas, improvement in cotton seed planters.

Ebenezer W. Nichols, Worcester, mode of securing brace-bits in their sockets.

Jno. H., James M., and H. Q. Thompson, Holderness, N. H., improved machine for polishing the soles of boots and shoes.

Alexander H. Niles, Georgetown, N. Y., improvement in carriages.

Francis Peabody, Salem, Mass., method for regulating windmills.

Jno. M. Perkins, New-York, improved mode of attaching hubs to axles.

Geo. W. Phipps, Philadelphia, improvement in window shutters.

Jno. K. Root, Hartford, improved slide lathes.

S. J. Russel, Chicago, hot air furnace.

James H. Stimson, Baltimore, improvement in butter coolers.

Wm. McK. Thornton, Pottsville, improvement in machine for creasing the edges of leather straps.

Jeremiah C. Tilton, Sanbornton Bridge, N. H., improvement in temples for looms.

Leonard Tilton, New-York, device for adjusting planing machinery.

Benj. B. Webster, Boston, improvement in spring curtain rollers.

David Weiser, Milwaukee, improved composition for filling in fire-proof safes.

Robert Wicks, New-York, improved furnace grate-bar.

Robert J. Marcher, Bloomington Grove, N. Y., assignee of J. S. Barber, Boston, Mass., machine for cutting irregular forms.

Henry Terry, Plymouth, Conn., assignee of John M. Heck, of same place, improvement in dressing sewing thread.

Samuel Huffman and C. D. May, assignees of Samuel Huffman, Charleston, Ill., improved mode of indicating the number of yea and nay balls, in machine for taking votes in legislative bodies.

Jno. Taggart and Julius S. Shailer, Roxbury, assignees of John Taggart, aforesaid, fluid metre.

Benjamin S. Nicholson, administrator of John F. Nicholson, deceased, late of Davidsonville, Md., improvement in grain harvesters.

Arad Woodworth 3d, of Boston, improvement in machinery for spinning.

M. G. Hubbard, New-York, improvement in springs for carriages.

Geo. B. Ambler, Trumbull, Conn., improvement in wooden saddle trees.

Lucius B. Bradly, Watertown, Conn., improved rat-trap.

Thomas G. Boone, Brooklyn, improvement in steam boilers.

Leonard Campbell, Columbus, Miss., improvement in cotton gins.

Lewis W. Colver, Louisville, improvement in seed planters.

Robert Cushman, Pawtucket, improvement in stop motion of knitting machines.

D. W. Clark and H. Gray, Bridgeport, Conn., improvement in carriage wheels.

John Chase, Jr., Pequonock, Conn., improvement in brick presses.

Rufus K. Chandler, Richmond, improvement in wristbands of shirts.

Daniel Drawbaugh, Eberly Mills, Pa., stave machine.

Michael B. Dyott, Philadelphia, improved warm-air furnace.

Charles A. Durgin, New-York, improvement in sewing machines.

Wright Duryea, New-York, improvement in umbrellas.

Marcus D. Du Bois, Newburgh, improvements in valve gear for oscillating engines.

Henry Gross, Tiffin, Ohio, machine for cutting screws on bedstead rails.

Henry Gross, Tiffin, Ohio, improvement in firearms.

Jonathan Haines, Pekin, Ill., improvement in grain harvesters.

Chase B. Horton, Elmira, improvement of hullers of buckwheat.

J. W. Hoogland, of Jersey City, tree-nail machine.

M. G. Hubbard, New-York, improvement in carriage springs.

Isaac Krebs, Winchester, Va., improvement in whiffletrees.

A. B. Latta, Cincinnati, improved carriage for steam fire-engines.

Charles B. Loveless, Boston, improved air-heating cook stoves.

Henry B. Lum, Sandusky, improvement in farm gates.

David Mathew, Philadelphia, improvement in spark arresters.

Robert J. Marcher, Salisbury Mills, N. Y., tool for grooving mouldings.

Jacob Marshall, Reading, improvement in lubricating compounds.

Jason C. Osgood, Troy, N. Y., improvement in submarine excavating machines.

Henry Pearce, Cincinnati, improvement in cordage machinery.

J. Reymen, Dubuque, improvement in fences.

Thos. F. Rowland, Jas. Stephens, and Wm. H. Mason, Brooklyn, improved apparatus for drying grain.

T. J. W. Robertson, New-York, improvement in sewing machines

Edgar M. Stevens and Jos. B. Crosby, Boston, and Jos. W. Pearson, Winchester, Mass., improvement in seed planters.

John Tucker, Norway, Me., improvement in ox yokes.

Geo. Turner, Edinborough, Pa., mandrel for cutting tapering sticks.

John Tyler, West-Lebanon, N. H., curbs for water wheels.

Jonathan Whipple, Jr., Milford, Mass., improved self-acting nipper block.

Leroy S. White, Chicopee, and Lewis White, Hartford, Conn., improvement in telegraphic key apparatus.

Caleb Winegar, Union Springs, N. Y., method of closing and opening gates, etc.

John H. Wygant, Hackensack, N. J., improvement in spikes.

Linus Yale, Newport, N. Y., improvement in bank locks.

Jonas B. Aiken, Franklin, N. H., assignor to Jonas B. Aiken and Herrick Aiken, Franklin, aforesaid, improvement in knitting machines.

J. S. Barden, New-Haven, assignor to Oliver Snow, and G. B. Farnam, Menden, Conn., water metre.

F. S. Coburn, Ipswich, assignor to Ruggles, Nourse, Mason & Co., Worcester, Mass., improvement in screw wrenches.

Abraham Gessner, Williamsburgh, assignor, through others, to the "North American Kerosene Gas Light Company," improvement in burning fluids.

Lucien E. Hicks, Boston, assignor to himself and Geo. N. Davis, Boston, aforesaid, improvement in hose couplings.

Joseph Bond, Jr., Philadelphia, improvement in sewing machines.

Thomas Arnold, Mobile, improvement in invalid bedsteads.

John Avery, Lowell, Mass., improvement in shuttle motion of looms.

Charles F. Brown, Warren, R. I., improvement in cartridges.

Samuel W. Brown, Lowell, improvement in gas regulators.

E. Daniels, New-York, improvement in invalid bedsteads.

E. W. Goodale, Clinton, Mass., improved machine for making paper bags.

John Henderson, Horseheads, improvement in hub and axle fastenings.

Wm. W. Hubbard and David Mathew, Philadelphia, improvement in vapor engines.

Thos. Foster Thornton, Buffalo, assignor to George A. Prince and Thomas Stephenson, Buffalo, aforesaid, improved sweel for melodeons.

Homer Holland, Westfield, Mass., improvement in processes for treating auriferous and argentiferous sulphurets.

Dean S Howard, Lyonsdale, N.Y., water wheel.

Joseph Hollely, Brooklyn, fluid faucet.

Edward G. Hyde, Camptown, N. J., improvement in the construction of ear trumpets.

John N. King, Murray, N. Y., improvement in swing bridges.

T. J. Kindleberger, Springfield, O., improvement in cider mills

Gabriel Leverich, Wellsburgh, N. Y., apparatus for paging books.

William Landsdell, Memphis, improvement in buoyant propellers.

George W. La Baw, Jersey City, mitre machine.

William Maurer, New-York, improvement in door locks.

Thos. S. Minness, Meadville, Penn., improvement in seed planters.

Henry Mellish, Walpole, improved shoe for grain mills.

Erasmus A. Pond, Rutland, Vt., improvement in pill-making machines.

Silas S. Putnam, Boston, improvement in forging machines.

Francis Peabody, Salem, improved grass harvester.

E. Truman Prentiss, Philadelphia, improvement in lubricating compounds.

Henry A. Rosenthal, New-York, improvement in uterine supporters.

David Stoddard, Cincinnati, improvement in cut-off valves.

Jacob C. Schlough, Easton, Pa., improvement in grate bars for furnaces.

Webster Shibbes, Thomaston, Me., assignor to himself and Edward O'Brien, of same place, improvement for reefing topsails.

Isaac M. Singer, New-York, improvement in sewing machines.

Daniel W. Snell, Woonsocket, improvement in looms.

Alfred B Seymour, Claverack, N. Y., improvement in machines for helically creasing sheet metal pipes.

Richard A. Stratton, Philadelphia, improvement in chairs for dentists' use.

Chapin Street, Barre Centre, improvement in grain drills.

Francis Fitzpatrick, Cincinnati, improvement in straw cutters.

J. B. Terry, Hartford, improvement in pin-sticking machines.

Harvey Webster, and Alonzo Webster, Montpelier, improvement in whiffletrees.

Wm. D. Wilson, Richmond, Va., improved corn grinder and crusher.

Milton D. Whipple, Charlestown, Mass., improvement in preparing wood for paper pulp.

E. D. Williams, Wilmington, Del., improvement in vehicles.

Courtland Wilson, and Wm. Moore, Jr., Yardleyville, Pa., improvement in mowing machines.

Joseph Welsh, Philadelphia, improvement in looms.

Sigismund Beer, New-York, assignor to Lewis Feuchtwanger and Sigismund Beer, New-York, aforesaid, improvement in de-vulcanizing India rubber.

Addison Capron, of Attleboro', assignor to himself, Jos. S. Dennis, Somerville, and Hervey M. Richards, Attleboro', improvement in sewing machines.

Alfred Swingle, Boston, assignor to Elmer Townsend, Boston, aforesaid, improvements in hand pegging machines.

Lucien E. Hicks, Boston, assignor to himself and Hiram D. Hall, Beverly, improvement in pads for hernial trusses.

Francis Walle, Bethlehem, Pa., machine for making paper bags.

Abraham Gesner, Williamsburgh, assignor to "the North American Kerosene Gas Light Co.," improvement in burning-fluid compounds.

Leander R. Streeter, Lowell, assignor to himself and Ira Leonard, of same place, improvement in amalgamating the precious metals.

James Albro, Elizabethtown, N. J., for improvement in registering blocks for printing oil cloths.

Lucien A. Butts, Cuba, N. Y., for improvement in seed planters.

Daniel Blocher and Geo. M. Blocher, Cumberland, for improvement in burning brick.

Ernest Bahr, Rochester, Ind., for improved ship ventilator.

Thomas Champion, Washington, for improvement in feeding water to steam boilers.

P. J. Coogan, Charleston, for improved arrangement of drains for sewers.

Chas. H. Dana, West-Lebanon, N. H., for improvement in seed-planters.

Lewis W. Clover, Louisville, for improvement in washing machines.

William H. Degges, Washington, improvement in the soak pits of brick machines.

William H. Degges, Washington, for improvement in brick machines.

Andrew Dietz and John G. Dunham, Raritan, N. J., for improvement in reaping and mowing machines.

Thomas Estiack, of Philadelphia, for improved mode of securing washboards to walls.

William Fisher, Philadelphia, for method of composing music.

Franklin J. French, Whittingham, Vt., for improvement in boot jacks.

Luther Hill, Stoneham, Mass., for improved machine for skiving boot and shoe counters.

M. G. Hubbard, New-York, for improvement in grain and grass harvesters.

Lansing E. Hopkins, Brooklyn, for improvement in the process of manufacturing hats.

William R. Jackson, Baltimore, for improvement in floating cabins for steam and other vessels.

Edwin A. Jeffrey, Corning, N. Y., for double-acting pump.

Harrison Loring, Boston, for improvement in apparatus for bleaching rags.

William S. Loughborough, Rochester, for improvement in fastenings for carpets.

Samuel J. M'Dougall, Brooklyn, for improvement in hydro-carbon vapor apparatus.

Daniel Minthorn, New-York, for improved brace for supporting garments.

Silvanus Perkins, Pittsburgh, improvement in wagon wheels.

Andrew Rankin, Newark, for improvement in the manufacture of hats.

Samuel J. H. Smith, Boston, improved portfolio.

George S. G. Spence, Boston, improved furnace for warming buildings.

Joseph D. Spiller, Concord, bench rest.

Harlon H. Thayer, Sandwich, improvement in machine for kneading clay.

O. B. Tomlinson, Athens, Pa., for improvement in the manufacture of ornamental felt cloth.

Henry Webster, Beetown, Wis., for improvement in steam-engine regulators.

Hiram Wheeler, Boston, improvement in gas regulators,

Wm. C. Whipple and Wm. C. Bowe, Westville, Ct. for improved melodeon.

Wm. Whiteside and John Shin, Philadelphia, for improvement in looms.

George W. Zeigler, Tiffin, Ohio, for improvement in boot coupling machines.

Wm. Darker, Jr., of West Philadelphia, assignor to J. B. Thompson, Philadelphia, for improvement in ring-spinning frames.

Anthony Pollak, Philadelphia, improvement in wrought-iron beam and girders.